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NATIONAL ELECTRICIAN

FORMERLY ELECTRICAL CONTRACTOR-DEALER

(ELECTRICIAN—Trade Mark)

Vol. 21, No. 3

Official Journal of National Association of Electrical
Contractors and Dealers

JANUARY, 1922

For Show Case Lighting

X-Ray Scoopettes are NOW AVAILABLE in standard package form for immediate shipment from Jobbers' stocks.

For
Standard
Socket

(Medium Screw Base)

15 or 25 Watt Round Bulb
(G-18½)
Standard Base Lamp

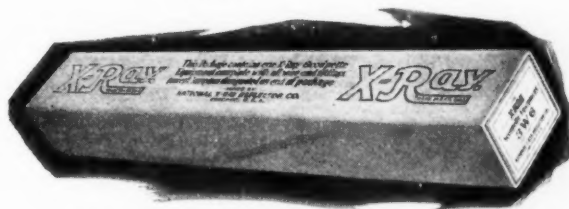


X-Ray
Scoopette

NO. S-200

Finish Black Nickel

For Standard 100-130 Volt
Lighting Circuit



Each Package Contains Complete Equipment for
One Show Case



X-RAY Reflectors
EVERLASTING BRILLIANCY

For Flood lighting because
they are powerful and per-
manently efficient.

The standard for show win-
dow lighting in the world's
largest shopping districts



Supplied through regular Electrical Trade Channels

NATIONAL X-RAY REFLECTOR COMPANY

NEW YORK
31 West 46th Street

CHICAGO
235 West Jackson Boulevard

LOS ANGELES
804 Security Building

ENGINEERS IN ALL PRINCIPAL CITIES

Gravity and Electric Re-set Annunciators can be furnished in any capacity, mounting and finish. They are well made, low in price and will give satisfaction.



**GRAVITY
ANNUNCIATOR**
No. 369



APARTMENT HOUSE



**PR "MARLO"
BELL**

PR "Eclipse," "XXX" and "Marlo" Bells and Buzzers, with 2½", 3" or 4" Gongs, are specially suitable for apartment house signal systems. Their strong construction insures continued service.

INTER-TALK TELEPHONE SYSTEMS

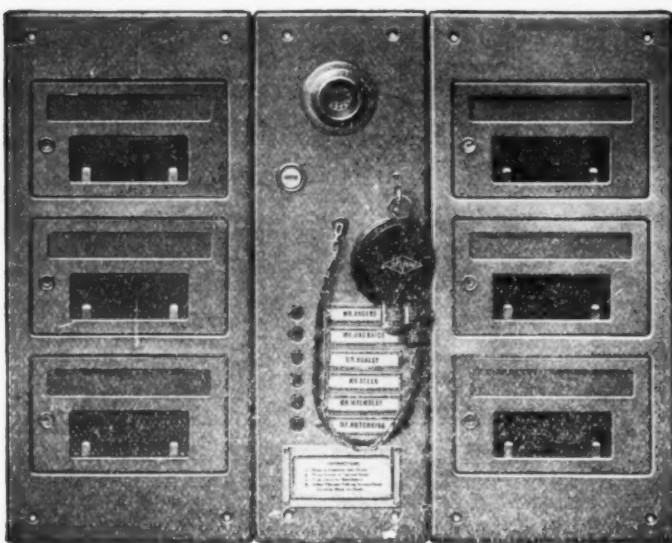
are the result of long manufacturing experience and diligent studies of present day requirements. The apparatus are of rugged construction and design—Easy to install and to connect—Reliable in operation.



**VESTIBULE
STATION NO. 2510**
(Without Letter Boxes)



**JANITOR'S
STATION**
NO. 2813



FLUSH VESTIBULE TELEPHONE
TYPE NO. 2509 N
WITH 3 OR 4-NEST LETTER BOXES



**FLUSH
SUITE STATION**
NO. 2530



**WALL
SUITE STATION**
NO. 2524

Manufacturers of
FARADAY Signal Gongs
and Fire Alarm Systems,
DeVEAU Telephones, An-
nunciators, Push Buttons
and Signalling Systems,
PATTERSON Battery Sets
and Specialties, PR Bells
and Buzzers
Information on any of the
above sent promptly upon
request



**DEVEAU PERFECTION
MIDGET TYPE
PUSH BUTTON NO. 5A**

Manufacturers of
FARADAY Signal Gongs,
and Fire Alarm Systems,
DeVEAU Telephones, An-
nunciators, Push Buttons
and Signalling Systems,
PATTERSON Battery Sets
and Specialties, PR Bells
and Buzzers
Information on any of the
above sent promptly upon
request

STANLEY & PATTERSON

**WEST & HUBERT STREETS
NEW YORK**



DISTRICT SALES OFFICES:

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C. C. Corcoran
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PHILADELPHIA
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PLIADUCT

For Faster Fishing

The "slick as silk" inside surface of *PLIADUCT* means faster fishing—even where there are longer runs and more bends. And that means lower labor cost and increased ability to handle rush jobs right.

Samples on Request

**SHORT ELECTRICAL
MANUFACTURING CO.**

WILLIAM HANDLEY, GENERAL MANAGER

General Sales Offices: 3-5 Waverly Place, New York City

THE RESOLUTION

Whereas, There is need of words to designate our business and activities; and

Whereas, It is proper that we should deliberately add to our vocabulary such properly derived words as are required; now therefore, be it

Resolved, That the following words be adopted as recognized by us with the meanings attached: (See opposite).

FARQUSON JOHNSON
Editor and General Manager

NATIONAL ELECTRAGIST

FORMERLY ELECTRICAL CONTRACTOR-DEALER

(Trade Mark)

The Official Journal Published Monthly by the National
Association of Electrical Contractors and Dealers

THE NEW WORDS

Electragy—Name of the trade or business of Electrical Contractor-Dealer.

Electragist—A person conducting such a business.

Electragician—A person working at the business.

Electragize—A verb—to work at the business—or to provide electrical equipment.

Electragic—An adjective—relating to the business.

Electragian.

Electragial.

JAY S. TUTHILL, News Editor
G. W. HAUPTLI, Advertising

Volume 21

JANUARY, 1922

Number 3

TO OUR READERS

All matter for publication must be in the hands of the Editor by the 10th of the month preceding publication.

All changes in our mailing list should be received by us two weeks prior to date of publication of the issue with which the change is to take effect.

TO OUR ADVERTISERS

Changes in advertisements and all advertising copy should reach our office not later than the TENTH OF THE MONTH previous to the date of issue.

SUBSCRIPTION RATES

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Single Copies.....20 cents

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Electrical Contractors and Dealers.

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15 West 37th Street, New York City

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Spiralweave

Wires and Cables

ARE MADE LIKE AND WEAR LIKE FIRE HOSE

Portable cables suffer the same rough treatment as fire-hose. Dragged about over rough surfaces and sharp edges, through mud and water, bruised by falling objects and run over by heavy trucks, its covering must be exceptionally enduring.

"Spiralweave" is the same weave as that used in fire hose. The warp strands run lengthwise of the wire giving great longitudinal strength while the filler strands run spirally around the wire, giving great resistance to the lateral wear that comes from dragging the wire sideways. Such a covering does not stretch and bulge as a braided covering.

"Spiralweave" wires and cables are also made for other applications such as Tree Wire, Mine Power and Lighting Cables and Mine Shaft Cables where longitudinal strength and wear resistance is needed.

We will be glad to send you data describing "Spiralweave" Wires and Cables as well as other Hazard electric wires.

HAZARD MANUFACTURING COMPANY

NEW YORK

DENVER

PITTSBURGH

BIRMINGHAM

CHICAGO

WILKES-BARRE, PA.

Makers of Quality Wire Rope since 1848.

HAZARD RUBBER INSULATED Wires & Cables



Insurance at Cost

THE POLICY

of Lynton T. Block & Co. is to issue the most satisfactory and comprehensive insurance to be had anywhere—

Furnishing absolute protection at cost.

Embodying all the standard features and more.

Covering special classes and selected risks.

Selling at established rates.

Returning savings at the end of the policy period, depending on the individual experience of the risk.

Giving a claims service that is not equalled elsewhere.

It is an honest policy, carried out in an honest way and gives a square deal under all conditions.

This forms the creed of every member of the organization and has built up the reputation of Lynton T. Block & Co. until it is one of the best and most favorably known in the Mississippi Valley.



Workmen's Compensation
Employers' Liability
Public Liability
Teams' Liability
Contractors' Liability
Elevator
Automobile
Fire Insurance



LYNTON T. BLOCK & CO.

Underwriters

of

Insurance at Cost

Utilities Indemnity & Fire Exchanges

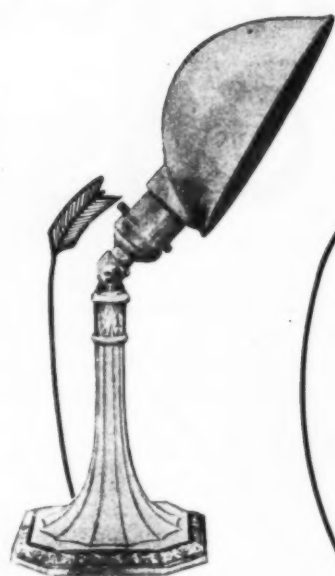
Employers Indemnity Corporation

Chamber of Commerce Building,

St. Louis, Mo.

Forty-eight Years

Five Times a Day
or 87,600 Times



Quality that
Lasts



The
Popular
Push-Button
Socket

For
Portables
and Dainty
Boudoir
Lamps



P&S S-34 Push-Button
Body—Operated 87,600
times at 3A.-250V.

This is equal to 48 years at the average
of five operations a day

Order P&S Push-Button Sockets Now
Prompt Delivery

Made by
Pass & Seymour, Inc.
SOLVAY, NEW YORK, U. S. A.



Now When Christmas Sales are Over Hemco Twin-Lites sell faster than ever

For a quick turnover item for January, put in a Hemco Twin-Lite window display. Most appliances pass their peak at Christmas. But January is one of the biggest selling months for Twin-Lites. Read why at the right.

Twin-Lite Plugs are one of the few lines that bring in good profits during January.

By this time everyone in your community who received a lamp or electrical appliance for Christmas has found that he or she *must* have one or more Twin-Lite Plugs for real convenience in connection.

Just bring Twin-Lite Plugs to their attention and you will be surprised at the volume of after-Christmas profits you can bring in.

Now is the time to put in a Twin-Lite window display. Our new and attractive display material will make it easy for you. It stops the passer-by and brings him in with his money in his hand.



**HEMCO
TWIN-LITE**
HEMCO is on Every Twin-Lite
MADE OF CONDENSITE
WILL LAST A LIFE TIME

"HEMCO" is on Every Twin-Lite

HEMCO Twin-Lite Plugs are moulded in one piece of Condensite—unbreakable—not affected by heat or moisture. Fit any socket.

If you haven't this new display material, mail this coupon now and go after these extra profits.

GEORGE RICHARDS & Co.
Dept. 24 557 W. Monroe St., Chicago, Ill.

GEORGE RICHARDS & CO.
344 E. 40th Street
New York City

Pacific Coast Agents
GEO. A. GRAY CO.
589 Mission St., San Francisco

New England Agents
PETTINGELL ANDREWS CO.
Boston, Mass.

Sole Export Distributors
CORNELIUS-SCOTT-SARGEANT, INC.
29 Broadway, New York City

**Get your new display
material now—
mail the coupon**

GEORGE RICHARDS & CO.
Dept. 24, 557 W. Monroe St., Chicago, Ill.
Please send me your standard package of Twin-Lite display material.

Name.....

Address.....

City..... State.....

WEBER DEPENDABLE WIRING DEVICES

The Only Sensible Scheme FOR THE Retail Merchandising of Plug Fuses No Special Packing. No Increased Price.

Sell every
customer
ten fuses—
two 30's for
the entrance
cut-out, and
eight 10's
for the
branch circuits



One card
enclosed
FREE
in each
carton (50)
of 10-ampere
and
30-ampere
fuses

If you have WEBER fuses in stock, write us the name of the jobber from whom you bought them and we will send you a supply of cards so that you can at once profit from the advantage of this novel selling scheme and not have to wait for new shipments to come through from the factory.

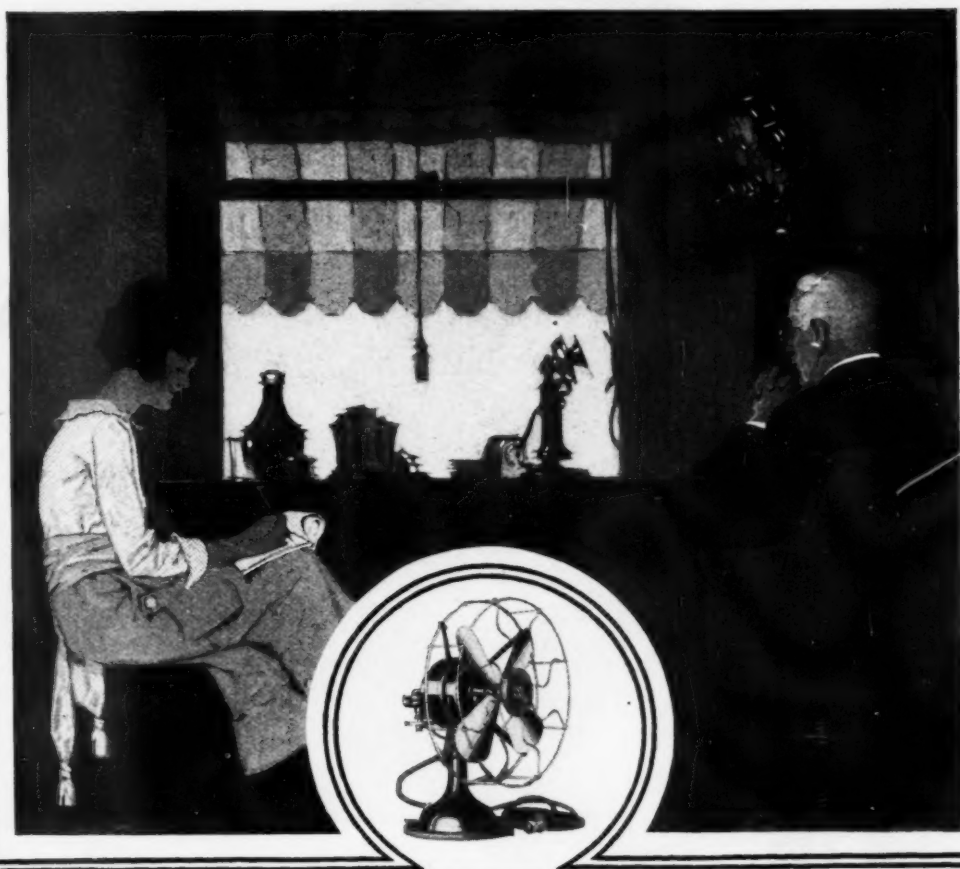
On your next order for plug fuses, specify WEBER

CONSULT OUR 1921 CATALOG

HENRY D. SEARS

General Sales Agent

80 BOYLSTON STREET
BOSTON 11, MASSACHUSETTS



QUIET operation is a very desirable feature in a fan for office service. In homes, hospitals, theatres and hotels too, silent service is an important characteristic, and dealers find this feature of the R & M Fan a big sales help.

Since noise in any machine usually indicates vibration, wear and tear on the machine, the smooth, quiet operation of the R & M Fan is a promise of the long life and untroubled service the customer can expect when he buys an R & M Fan. And likewise it is the dealer's insurance of a satisfied, profitable customer.

THE ROBBINS & MYERS COMPANY

SPRINGFIELD, OHIO

BRANTFORD, ONTARIO

Robbins & Myers Fans



**A Copy of this Catalogue, 7-A,
should be on every dealer's desk.**

It illustrates, and describes in detail, with
prices, the full line of Westinghouse-Cutter
Industrial Lighting Equipment.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY
George Cutter Works, South Bend, Indiana

Westinghouse

One Motor With a hundred uses for the HOME-SHOP and STORE



A New "After Christmas" Idea!

What can you sell after Christmas: after peak holiday sales are past?

Westinghouse offers you a new suggestion—an after-Christmas sales plan that will keep your sales going strong.

It is the idea of selling the **small motor** to the storekeeper for his coffee grinder, and to the man at home for his odd jobs—for a power work bench.

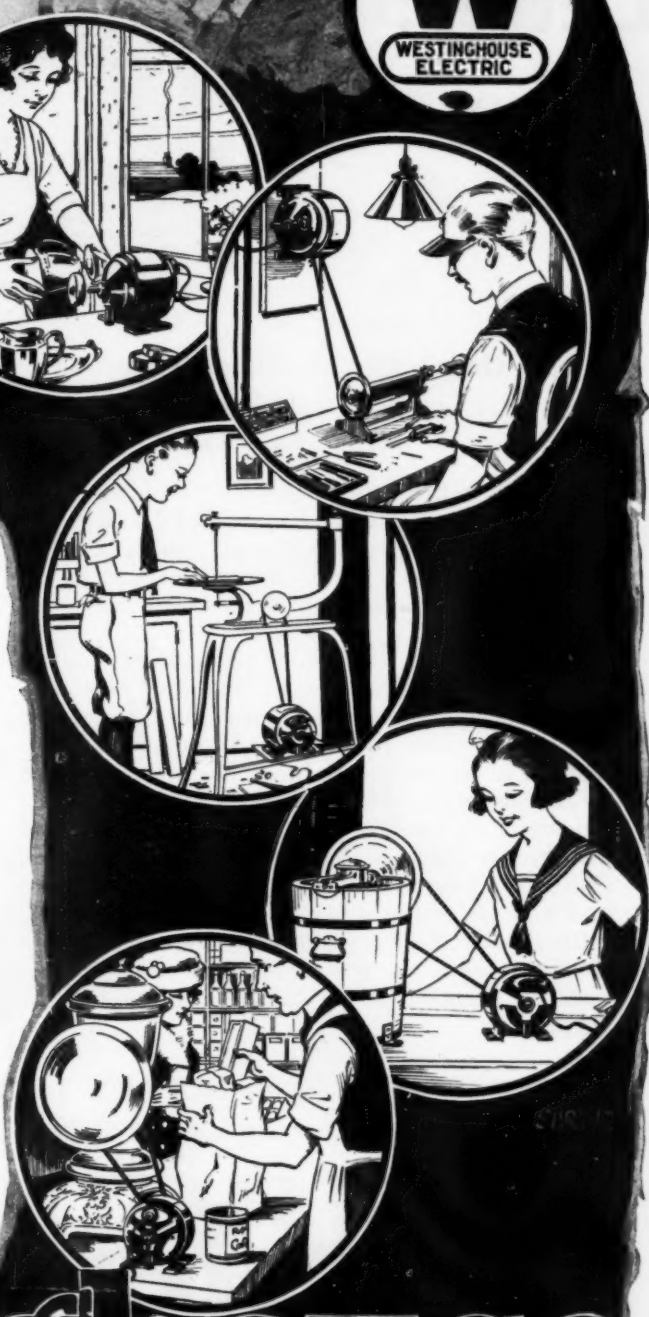
These sales are not hard, your customers are generally enthusiastic over the many handy jobs this inexpensive little motor will perform, and enthusiasm fosters permanent customers.

Are we not right?

Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

Offices in all Principal American Cities

Westinghouse



Read This Letter:



The United Electric Supply Company

Marion, Ohio, Oct. 11, 1921.

This store is the outgrowth of a business started ten years ago on a capital of \$560.00 and as the result of religiously sticking to our slogan "Service to our Customers," we grew until we had to enlarge our quarters to the present size.

Another reason for our success has been that we are firm believers in keeping step with new electrical developments and when the Duplexalite and the company's policy was brought to our attention, we saw its possibilities. We were attracted by the way it came to us, packed complete, ready to install, in a small carton. The fact that you had distributors who carried a large stock also attracted us because it limited us to a very small investment and because of the many places where it successfully serves, the turnover was fast, giving us a splendid profit on the amount invested so that now we consider it the most profitable fixture we handle.

We do not sell a bill of fixtures to a house without including at least one Duplexalite. We have installed over five hundred of them in Marion, Ohio, and only recently we made an installation in President Harding's Marion Home.

You no doubt are interested to know how we have sold them. As we had no booth or facilities for properly displaying the good lighting result obtained, we hit upon the plan of putting them in the homes on trial and we were astounded when we checked up and found that the average comebacks were one in ten installed, also that in many cases the customer who bought the one would return and buy more.

We made one trial installation that resulted in the replacement of four other fixtures in the same house and when this party built two houses with ten rooms each, he installed in every room a Duplexalite. It makes the most satisfactory kitchen light we have ever handled.

THE UNITED ELECTRIC SUPPLY CO.

C. W. Graf
GENERAL MANAGER.

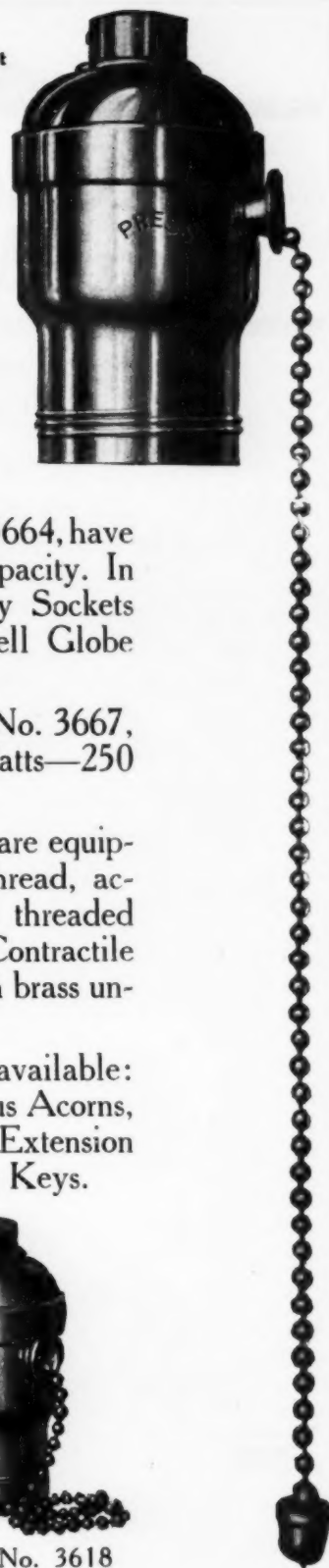
DUPLEX LIGHTING WORKS

Of General Electric Company

6 West 48th Street, New York City

Duplex-a-lite

"The light to live with"

Hubbell Pull Socket
List No. 3618

HUBBELL SOCKETS

(Brass Shell) Pull, Key and Keyless

NATIONAL Electrical Code Standard, Hubbell Brass Shell Sockets afford perfect interchangeability for all classes of wiring. The QUICK CATCH socket shell permits the use of standard shells and socket mechanisms with more than 30 types of shell caps and bases. Uniform service is thus obtainable, whether it be from chandelier or wall bracket, angle cap or ceiling outlet.

Hubbell Pull Sockets are reliable. Aside from the convenience afforded by the pull chain, extending below the lamp bulb, the mechanism itself is positive. No. 3618 is a popular size, with $\frac{1}{8}$ -inch shell cap—capacity 250 Watts—250 Volts.

Key Sockets, such as No. 3664, have 250 Watts—250 Volts capacity. In all genuine Hubbell Key Sockets the key bears the Hubbell Globe trade-mark.

Keyless Sockets, such as No. 3667, have a capacity of 660 Watts—250 Volts.

All Hubbell brass shells are equipped with shade-holder thread, accommodating any direct threaded shade-holder or Hubbell Contractile Collar. Finished in brush brass unless otherwise specified.

Special features are also available: Insulating Links, Luminous Acorns, Economy Extenders, Extension Eyelets, and Extra Long Keys.



List No. 3664



List No. 3667



List No. 3664



List No. 3618

HARVEY HUBBELL INC
ELECTRICAL SPECIALTIES
BRIDGEPORT CONN., U.S.A.



NEW YORK

SAN FRANCISCO

2186-U

CHICAGO

It's not the first cost that matters.

It's the cost of installing Loom that adds up—
That's where you save when you use

DURADUCT

DURACORD

is an economy, too, because it will outlast the
ordinary portable cord and show a lower cost
per month in service.

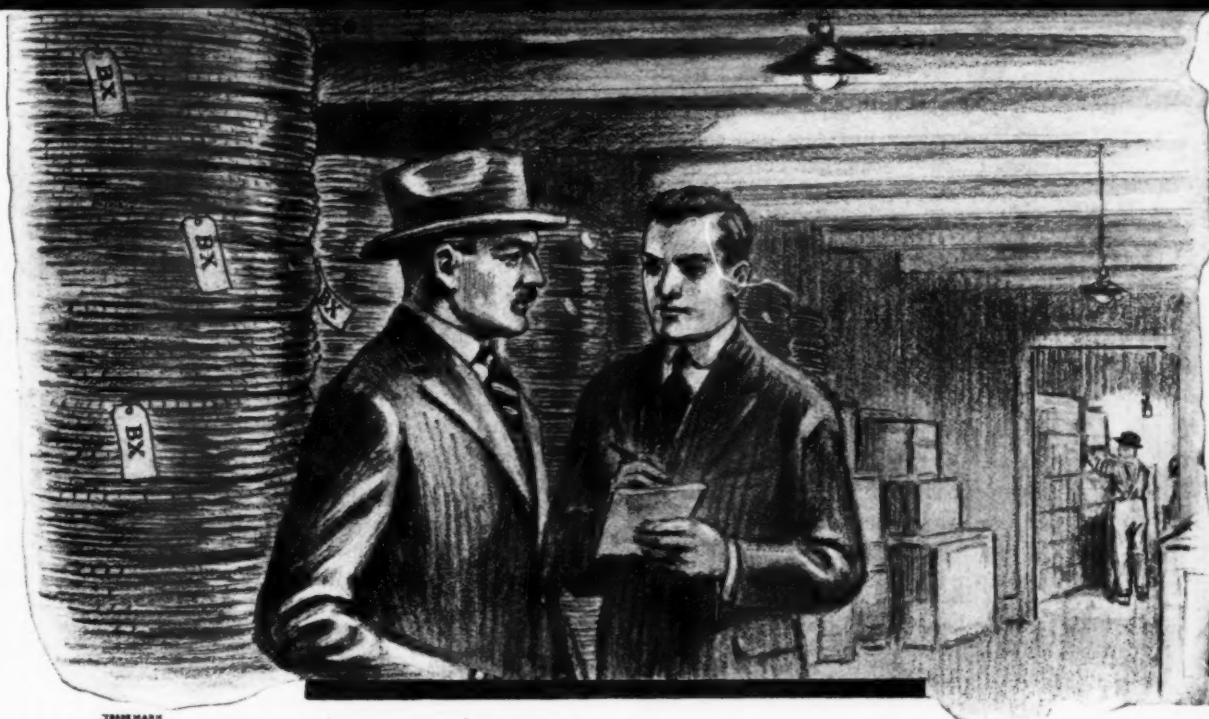
TUBULAR WOVEN FABRIC CO.

PAWTUCKET, R. I.

NEW YORK
52 Vanderbilt Ave.

CHICAGO
549 W. Washington Blvd.

When A Man Asks For "BX": What Do You Give Him?



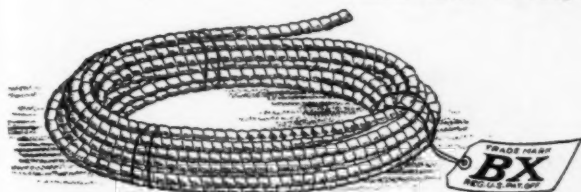
BX is a distinctive product
of the Sprague Electric Works

IT is the original Armored Conductor developed by the Sprague Electric Works over twenty years ago and represents the standard by which all other Armored Conductors have since been measured.

Thousands of dealers are realizing to-day that in the long run it pays to handle Armored Conductors so well built that once sold, stay sold and bring back orders for more.

Real "BX" does not kink, stretch or break—It's easy to handle—Wiremen like it.

If you are not already among the large list of those who handle "BX" it is to your advantage to communicate with us.



REAP the benefit of our publicity
by immediately increasing your
stock of "BX"

"Greenfielduct," (Hot Galvanized)
and "Spragueduct" (Black Enamelled)



Main Offices
527 W 34th St.
New York

SPRAGUE ELECTRIC WORKS

Of General Electric Company

Branch Offices
in Principal
Cities



Business Assurance for 1922

How many times have you asked yourself, "What can I do to assure myself a good business increase during 1922?" Here's the answer to that question — Build Your 1922 Business Around Lighting. Because —

1. Lighting—lamps, sockets, fixtures, etc., everything that goes into a lighting installation — comprises 66% of the typical electrical jobber's business and 68% of the typical electrical retailer's business.

2. The lighting market always responds to aggressive sales stimulation. Even though one lighting field may be dormant, other fields are always active.

3. Without special effort on the part of the agent, his lamp business increases approximately 15% annually. When he does active lighting sales promotion work, his sales possibilities are unlimited.

4. Light is a necessity. People have to have lamps. And they are a renewable commodity.

5. A uniform retail price is maintained by all agents.

6. Lamps are bought the year around. There's no big seasonable demand.

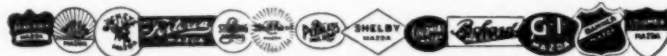
7. A lamp contract assures the agent the lion's share of the customer's electrical supply business.

8. A National MAZDA lamp agency carries with it no stock investment and the agent incurs no loss through obsolescence. The agent's compensation increases as his sales increase.

9. National MAZDA lamps are nationally advertised in popular magazines. Tie-up material and selling helps are furnished to live agents.

10. The advice and assistance of a highly specialized engineering department are at the disposal of every distributor and user of National MAZDA lamps.

Build Your 1922 Business Around Lighting. Push lamps first, last and all the time. Then your sales of other lighting equipment will follow as a matter of course and your 1922 sales are assured. National Lamp Works of General Electric Company, Nela Park, Cleveland.



Each of these labels represents a Sales Division equipped to give a complete lighting service



NATIONAL MAZDA LAMPS



Their past performance
is your assurance of
SATISFACTORY SERVICE

The real test of any product is not what the makers claim it *will do*, but what it actually has *done* over an extended period of years.

On this basis you can buy "Union" Switch and Outlet Boxes with the absolute assurance that you will get the *maximum* of safe, satisfactory and long-lasting service. No other line of Switch and Outlet Boxes can point to such a long and honorable record of "service rendered" as "Union." For 20 years, since they were first put on the market, they have proven their reliability to thousands of users.

The line is completely *standardized*. No time lost on the job waiting for "specials." The advantages of an endless assortment of special conduit bodies are consolidated in a few simple units. You can meet every wiring contingency from a more compact and more uniform stock, thus saving money and valuable storage room.

"Union" Boxes measure up in every respect to the same high standard of quality that has made all other "Union" products pre-eminent in their respective fields for the past thirty-two years.

For sale by leading Electrical Dealers and Jobbers everywhere.

Why not send for our complete catalog of Conduit Fittings *today*?

Chicago Fuse Mfg. Co.

*Manufacturers of Switch and Outlet Boxes, Cut-Outs, Fuse Plugs,
Automobile Fuses, Renewable and Non-Renewable Enclosed Fuses.*

CHICAGO

NEW YORK

"UNION"
SWITCH and OUTLET BOXES



National Association of Electrical Contractors and Dealers

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Gerry M. Sanborn-----1908-1910
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*Deceased.

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34 Cherry Street, Detroit, Mich.

UNIVERSAL DATA AND SALES BOOK

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U. S. CHAMBER OF COMMERCE

Robley S. Stearnes
336 Camp Street, New Orleans, La.

ANNUAL CONVENTION, CINCINNATI, O., OCTOBER 11, 1922. EXECUTIVE COMMITTEE MEETING, MARCH 13, 1922



Announcing the Arrow Toggle Switch

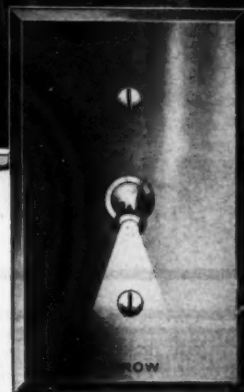
A NOTHER Arrow product that adds to the convenience of modern wiring devices.

The Toggle Switch often provides a convenient way to switch a light on or off when the usual method of pushing a button would be inconvenient.

Arrow Toggle Switches can be furnished with luminous tip handles if desired.



Catalogue
No. 6144



Arrow Toggle Switch
Catalogue No. 6176-6721

THE ARROW ELECTRIC CO.
HARTFORD, CONN.

ARROW

The complete line of Wiring Devices



ANYLITE

DIMMING SOCKET



HAS MANY ADVANTAGES

Gives ten degrees of light that you can see—
Bureau of Standards says twenty.

Takes Uno Shade Holder—You carry but one
type.

Fully guaranteed to work perfectly under
proper conditions.

Mounted ten, on attractive sales-making dis-
play card.

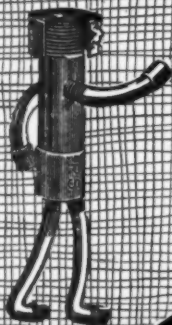
PRICED RIGHT—BIG PROFIT—QUICK SALES

Your Jobber Can Supply You or I Will

A. HALL BERRY

71-73 MURRAY ST.
NEW YORK, N. Y.

PITTSBURGH
THREAD PROTECTED
ENAMELED CONDUIT
STANDARD
PATENTED



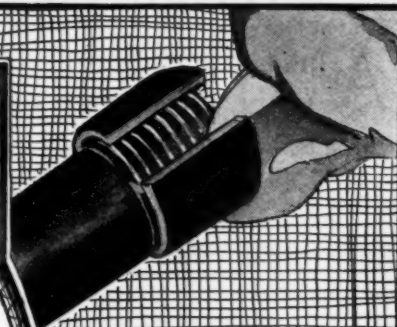
Quick and True

HELPS YOU do the job quicker
and better. Reaches you all set
to work, ready to install.

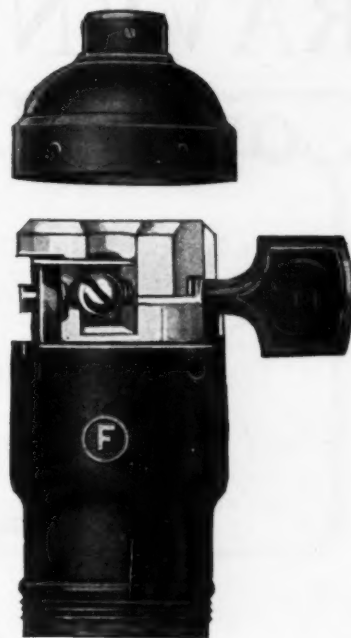
Efficiency is never sacrificed for
speed—the patented Thread Protec-
tors keep threads sharp, true and clean
—with just sufficient enamel to pre-
vent rust.

P. S. earns you more profits, be-
cause it saves time, increases efficiency
—yet costs no more than ordinary
enameled conduit.

P. S. Service for You.



ENAMELED
PITTSBURGH, PA.
METALS CO.



Remember This

The built in qualities of "Circle F" Brass Shell Sockets are the best that can be secured in design, materials and workmanship.

The "Circle F" is your protection and the mark of superior quality.

The Four Point Positive Locking Device is an absolute lock and a positive guarantee against separation of shell and cap through vibration, besides affording a much greater holding surface than other types.

Use "Circle F" Sockets where the service conditions are most severe.



E. H. Freeman Electric Co.

TRENTON, NEW JERSEY

RAVEN CORE—A Rubber Covered Wire of Distinction!

Made by a house of standing.

Specified by all the leading architects.

Used by the Contractors who do the better grade of work.

Can you afford to overlook it?

NEW YORK INSULATED WIRE CO.

Main Office: NEW YORK

Factory: WALLINGFORD, CONN.

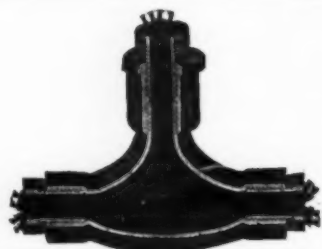
Agencies and Branches:

DENVER

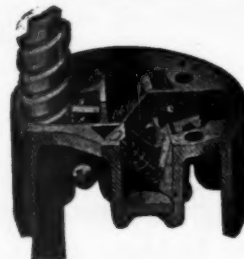
SAN FRANCISCO

CHICAGO

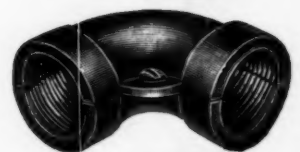
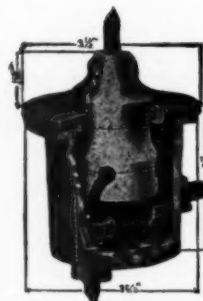
BOSTON



"Bulb" Tee with Brass Floor Coupling



Bushed Elbow
with Brass
Floor Coupling



A Few of the New Fittings Shown In Our New Catalog

DID YOU GET ONE? IF NOT, WRITE US

THOMAS & BETTS CO.

63 Vesey Street

New York, N. Y.

Chicago Office: 612-626 W. Jackson Blvd.

W. J. DOHERTY, Mgr.

Welcome to Milwaukee, Electrical Dealers

THERE'S a hearty welcome awaiting you at the great Lighting Fixture Market at Milwaukee, January 30 to February 4, 1922.

Three well-known and influential Associated Lighting Industries—The National Council of Lighting Fixture Manufacturers, the Lighting Fixture Dealers' Society of America and the Illuminating Glassware Guild—have organized at Milwaukee an exhibition of lighting fixtures, portables, lampshades, lighting novelties and appliances, and illuminating glassware, such as the world has never seen before collected under one roof.

From this marvelous display of the finest lighting creations and designs you can select your "lighting furniture" for 1922, secure in the assurance that practically every leading manufacturer has sent his best and greatest values in lighting fixtures for your inspection and approval.

Convention meetings, the famous noonday luncheons, the wonderful "Pageant of Light," the "Better Lighting Campaign"—all these enable you to combine profit, interest and enjoyment to suit your desires.

Welcome to Milwaukee, January 30—February 4, 1922.

For fuller details, write to:

Charles H. Hofrichter, Secretary

The National Council Lighting Fixture Mfrs.

Headquarters, 231-233 Gordon Square Building

West 65th Street and Detroit Avenue,
CLEVELAND, OHIO

President, F. R. Farmer

Vice-President, William Horn

Treasurer, B. F. Klein

A THREEFOLD WELCOME



The Lighting Fixture
Dealers' Society of
America



The National Council
of Lighting Fixture
Manufacturers



The Illuminating Glass-
ware Guild

Come to this—the greatest Fixture Market ever held—for it cannot be a complete success unless YOU are there.

Profit—Interest—Pleasure at Milwaukee, Jan. 30-Feb. 4

JOINT CONVENTION

National Council Lighting Fixture Manufacturers, Lighting Fixture Dealers' Society of America and Illuminating Glassware Guild.

LIGHTING FIXTURE MARKET

The greatest display of Fixtures, Shades, Portables, Lighting Novelties and Appliances, and Illuminating Glassware.

BETTER LIGHTING CAMPAIGN

A wonderful city-wide public demonstration of the advantages of Better Lighting and concluding with the marvelous "Pageant of Light."

Make a Note in Your Diary NOW
"Be at Milwaukee for Fixture Market"

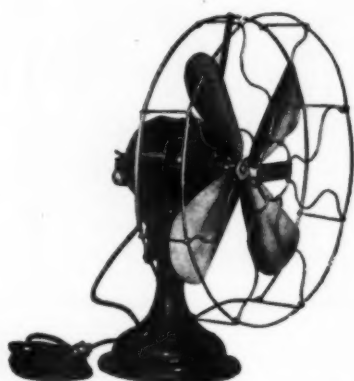
Place Your Order Early

FOR

Century

FANS

ALTERNATING AND DIRECT CURRENT
MODELS



Illustrating 16-inch Model

Their design and construction is such that when viewed from the standpoint of appearance, efficiency, the amount of air moved, speed control, strength and durability, they will prove highly satisfactory to all interested in them. Keep-A-Running ability has been the governing factor in their design and construction.

CENTURY ELECTRIC COMPANY

St. Louis, Mo., U. S. A.

Sales Offices in Principal Cities

"DIAMOND H"

REMOTE CONTROL SWITCHES

LAMINATED BRUSHES

IRONCLAD MECHANISM

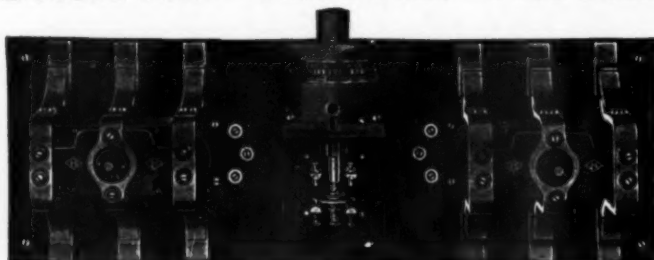
SELF CLEANING CONTACTS

FOR
ALTERNATING
CURRENT



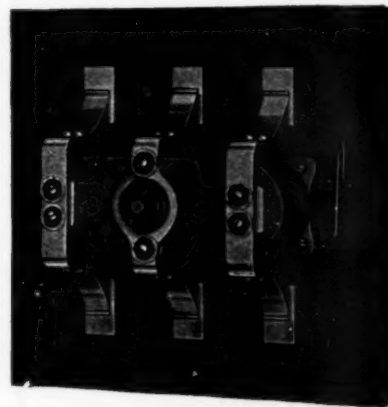
FOR
DIRECT
CURRENT

DOUBLE POLE—THREE POLE—FOUR POLE



Double Throw Combination

For two sources of supply with common load. Transfers automatically upon failure of one source.



Type "F" 3-Pole Back Connected
Remote Control Switch

Double Pole		TYPE "F"		Triple Pole	
Catalog Number	Ampere Capacity	List Price	Catalog Number	List Price	
730	30	\$36.00	790	\$43.20	
740	60	45.00	800	54.00	
750	75	60.00	810	67.20	
760	100	83.60	820	108.00	
770	150	108.00	830	124.80	
780	200	122.40	846	139.20	

Write for Catalogue and Discount Sheet

Made by

THE HART MANUFACTURING CO.

HARTFORD, CONN.,

U. S. A.

One Way to Reduce the Cost of Doing Business

A big bank in New York City says delays in turnover cost American business \$11,500,000 for interest each day of 1920. This charge was imposed by delays in shipments, delays in collections and the cost of capital invested in excessive stocks and slow moving goods on dealers' shelves.

There is going to be an interest bill for each day of 1922.

But—

It is within the power of each buyer of electrical goods to limit his contribution to it. He can hold down his investment by using our stocks for his reserve. His interest charges will be less and his turnover of working capital will be faster.

Everything he needs can be delivered quickly from the complete stocks of standard goods at our Distributing House near him. There are 48 of these Houses located in centers of trade and transportation throughout these United States.

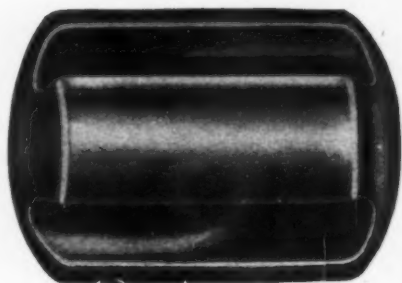
Their stocks and location can assist every buyer to obtain maximum turnover with minimum investment of working capital whether he buys for his own use or for resale.

A
National
Electrical
Service

Western Electric Company

OFFICES IN ALL PRINCIPAL CITIES

Strain Insulators for any purpose



No. 500, 502, 504, 506

IMPROVED STRAIN INSULATORS (Closed End)

No.	Height, Inches	Diam., Inches	Hole, Inches	Groove, Inches	Tensile Strain up to and including
500	2 1/4	1 1/2	1/8	5/8	12,000 lbs.
502	3	2 3/8	3/8	3/4	12,000 "
504	3 1/2	2 7/8	1/2	1/2	15,000 "
506	5 1/2	3 3/8	3/4	3/4	20,000 "



No. E-2277, E-2103, E-2092

No.	Height, Inches	Diam., Inches	Tensile Strain up to and including
E-2277	4 7/8	3 7/16	12,000 lbs.
E-2103	3 1/4	2 5/8	8,000 "
E-2092	2 1/2	2 1/4	5,000 "

Write for full information on
the complete line of Strain and
High Voltage insulators.

STANDARD AND SPECIAL PORCELAIN
MANUFACTURED BY THE

Trenton Porcelain Company
TRENTON, N. J.

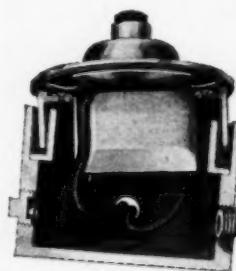
MR. ELECTRAGIST—

are you PREACHING the gospel of
"More Convenience Outlets" to Archi-
tects and Owners?

The chandelier must be cast into the dis-
card as a medium for supplying current to
electrical devices.

More Floor Outlets, Receptacles and
Switch Boxes must be installed if current
consuming devices are to be used daily as
a necessity, instead of as an occasional
luxury.

IT PAYS TO USE "THE QUALITY LINE"

Improved
"Steel City"
Switch BoxFullman
Adjustable
Floor OutletFullman
Non-Adjustable
Floor Outlet

WRITE FOR SAMPLE OF OUR NEW

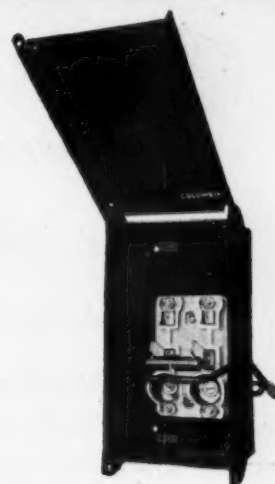
IMPROVED SWITCH BOXES

Free—Souvenir Pencil with "thick lead"
upon request.

Steel City  **Electric Co.**

1207-1223 Columbus Avenue
PITTSBURGH, PA.

*MR.
ELECTRICAL
CONTRACTOR:*



We all agree, Mr. Contractor, that a good safety switch, from the safety point of view, must be really safe—it must protect the operator.

But how about *your* point of view?

Does it cost you more in labor to install?

Have you plenty of room for wiring?

Are there enough knockouts of the proper size where you want them?

Are there any easily broken parts?

Will the mechanism stand up under hard abuse?

Is it fool-proof? Is it easy to operate?

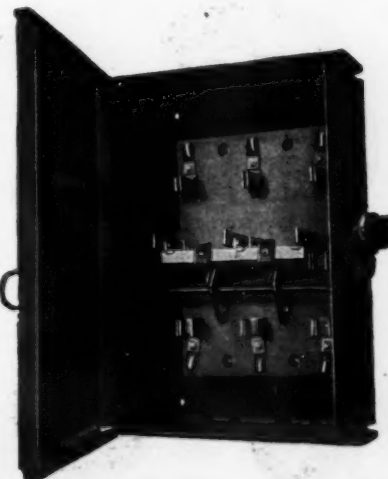
Is the price what it should be—or more?

Columbia Safety Switches were designed and made for the electrical contractor—for you. It will pay you to investigate. If you have not received Bulletin No. 22, write for it today.



**COLUMBIA
METAL BOX CO.**

*226 East 144th St.
NEW YORK*





WE MANUFACTURE

SHIELD BRAND

WEATHERPROOF, SLOW BURNING, ANNUNCIATOR, OFFICE
AND MAGNET WIRES AND CABLES



ACME, EUREKA and WIZARD IRON and WOOD BOX BELLS and BUZZERS

Annunciators and Push Buttons.

"Daisy" Floor Treads

The Ansonia Electrical Company, Ansonia, Conn., U.S.A.

Every Thing from Generator to Lamp

H. C. ROBERTS ELECTRIC SUPPLY CO.

PHILADELPHIA, PA.
1101-5 Race Street

Cor. W. Water & N. Franklin Sts.
SYRACUSE, N. Y.



ELECTRICAL SUPPLIES

AUTOMOTIVE EQUIPMENT



Needle Elevator
Annunciator



Target Drop
Annunciator



Gravity Drop
Annunciator



Pull Socket



Key Socket



Keyless
Socket



Sunbeam
Reflector



Floor Box

SPEAKING TUBES
FLOOR BOXES
PUSHES
FIRE ALARMS
SOCKETS

ANNUNCIATORS
W.R. OSTRANDER & CO.
MAKERS REG. U.S. PAT. OFF. NEW YORK.



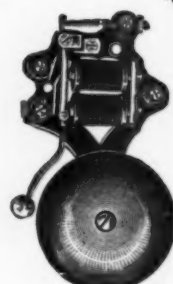
Half Tin Shade



Cone Tin Shades



Wood Box Bell



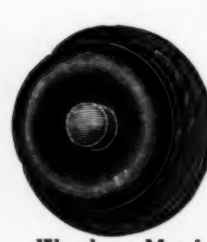
Skeleton Bell



Weatherproof
Bell



Iron Box
Bell



Wood or Metal
Push



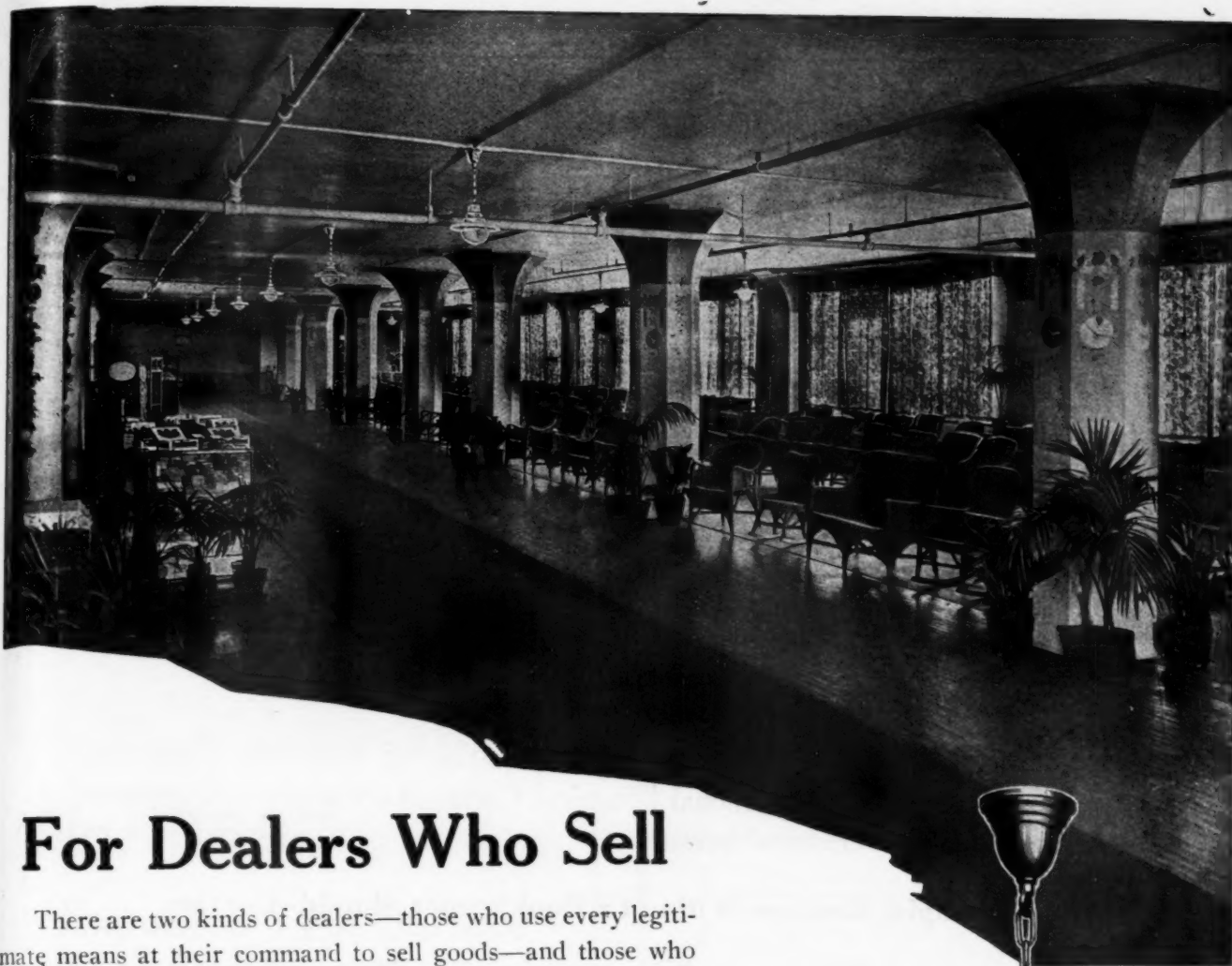
Metal Push



Angle Parabola Shade

TANK ALARMS
BELLS
BUZZERS
SHADES
LETTER BOXES

BURGLAR ALARMS



For Dealers Who Sell

There are two kinds of dealers—those who use every legitimate means at their command to sell goods—and those who wait for customers and orders. For the latter we have nothing to offer, but for those who work and think, a complete Denzar advertising and selling campaign is available. Our own investigations have shown that the market for commercial lighting equipment is larger than ever and that good equipment can be sold at a good profit.

The illustration above shows the reception room of the Roseland Dance Hall at Montreal, which is entirely lighted by Denzars. It is advertised as "Canada's largest dance hall" and suggests a new field for Denzar installations. The Perkins-Ladd Electric, Limited, of Montreal, Toronto, and Winnipeg, made the sale. What they have done other Denzar dealers can do. There are plenty of prospects for commercial lighting units in this country as well as in Canada, and Denzar is undoubtedly the best commercial lighting unit to sell.

If you are not making money on commercial lighting units, we believe we can show you why—let us know the particulars.

BEARDSLEE CHANDELIER MFG. COMPANY
231 South Jefferson Street
CHICAGO

Manufacturers of a Complete Line of Chandeliers For Every
Lighting Requirement



The opal reflector
and diffusing bowl of
Denzar produce an even
intensity, without glare or
distracting shadows, on both
horizontal and vertical surfaces

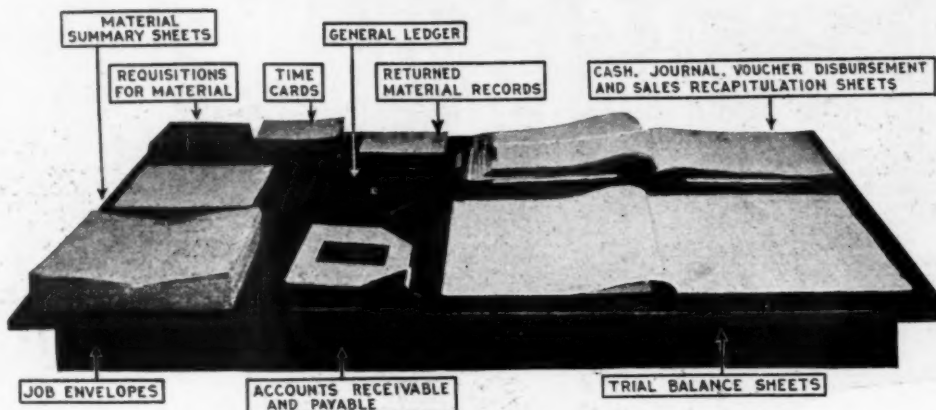
DENZAR

The Unit of Day Brightness

The Electragist Employing a Bookkeeper Should Use the

Standard Accounting System

*Here is the
complete set
just as
it looks
spread out
on an
ordinary
office table*



This is the system adopted by the National Association of Electrical Contractors and Dealers, endorsed by the National Electrical Credit Association, and approved by other branches of the electrical industry.

The Electragial Business Without a Bookkeeper Should Use the

New Business Record

This is an easy and simple way of keeping your accounts without the aid of a bookkeeper. Everything about it is plain and easily understood from start to finish. It consists of only eight forms, and these show the money taken in and paid out; the bills to be collected and to be paid; the general expense, investment and stock. There also is a binder for records, and a simple memo book.

IT TELLS YOU

How much money you have; how much you owe; how much money is due you; how much stock on hand; how much stock you buy; how much you sell; how much it costs you to do business; how much profit you make; or how much you lose; and all other necessary facts regarding your business.

DEPEND ON IT

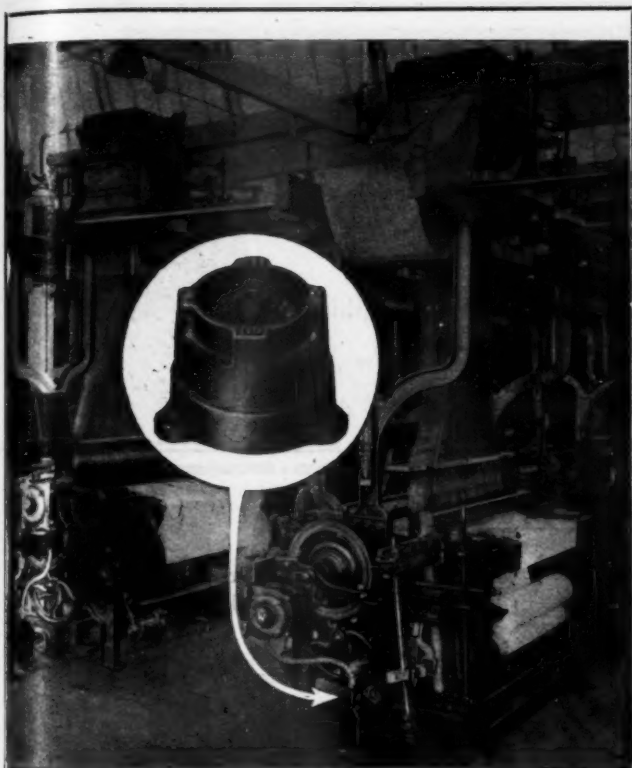
It is handy, and always ready for you to use; it is reliable and accurate; it saves you time, money, and worry; it settles disputes and saves money for you; it helps you straighten out matters with your banker, your jobber, and the tax collector; it is a necessary factor in your business.

**Look Into this Matter Today and Figure on Starting Your Business Record or
Standard Accounting System**

FULL INFORMATION SENT UPON REQUEST BY THE

National Association of Electrical Contractors and Dealers

15 West 37th Street, New York City



No. 2597

Expulsion Type Surface Snap Switch

Triple Pole—20 Amperes 250 Volts
—10 Amperes 600 Volts

This switch is designed particularly for controlling 3 phase motors up to 2 H. P., 600 volts. The cast-iron cover attaches to the usual conduit fittings made for this kind of service by several well known manufacturers.

The handle is fastened with a set screw and points to the words "On" and "Off" stamped in the cover, thus indicating the position of the switch. The switch is dust-tight and suited for use in textile mills, saw mills, flour mills, cement plants and other dusty places.

The same switch equipped with a nickel-plated brass cover is adapted for surface mounting in places where the switch will not receive rough use.

This is one of the five thousand and more wiring devices listed and described in our latest catalog. Send for a copy.

THE BRYANT ELECTRIC COMPANY
BRIDGEPORT, CONN.
NEW YORK CHICAGO SAN FRANCISCO

Just Out!

A really useful wiring hand-book



Nine big reasons why you should have this book

- 1 It fits the requirements of the National Code.
- 2 It conforms to the best American practice.
- 3 It is indexed so that you can find instantly the facts you need.
- 4 It is plainly worded so that anyone who can read English can understand it.
- 5 It is fully illustrated so that the right way to do a job can be grasped promptly.
- 6 It is besides, a common sense, practical commentary on the National Electrical Code.
- 7 It tells how to install wiring and apparatus for practically all services, under practically all conditions.
- 8 It tells how to install these so as to be electrically safe and mechanically correct.
- 9 It explains why installations should be made in a given way.

Important 1921 Supplement

This new third edition includes a forty-two page supplement which covers the latest changes in The National Code. It describes these changes and tells how to meet the requirements. Keep up to date with this new Croft's Wiring for Light and Power.

FREE EXAMINATION COUPON

McGraw-Hill Book Co., Inc.,
370 Seventh Avenue, New York, N. Y.

You may send me on 10 days' approval CROFT'S WIRING FOR LIGHT AND POWER, \$3.00 net, postpaid.

I agree to pay for the book or return it postpaid within 10 days of receipt.

Member of A. I. E. E.?

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 Hotel, House, Car
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 Automatic
 Self-Restoring
 Individual Set-Back
 Return Call Systems
 Telephone Systems
 Fire Alarm Systems
 Hospital Systems
 Apartment House
 Systems
 Etc., Etc.

Annunciators and Electrical House Goods

Manufactured by

PARTRICK & WILKINS CO.

Established 1867

51 N. Seventh Street,

Philadelphia

*Our Annunciators and House Goods in Stock
 and for Sale by Dealers Everywhere*



Send for
 Catalog

Two Sizes, Strong, Light, Neat "BUCKEYE" NEW SPLIT KNOB

Manufactured under Bower Patent No. 995838

The Buckeye Knob is interchangeable, Counting of pieces and matching tops and bottoms eliminated. It is interlocking and cannot twist nor get out of alignment.

Every piece being exactly alike, the breaking of one does not destroy or make useless a whole knob.

The wire grooves are deep and hold the wire firmly without injuring insulation, installed with either screw or nail.

The Buckeye is the only Interlocking Reversible Knob having two grooves on the same plane.

The Findlay Electric Porcelain Co., Findlay, O.



Patent Pending

THE NEW

CEEVEE

**ADJUSTABLE
 GROUND CLAMP**



Conforming to all the code requirements, tinned finish, listed with approved fittings. Made of the new size copper. Note how the wire is held. Even with a poor soldered joint a good connection is made.

No.	Size Pipe	Price Each	Unit Package	Standard Package
61	3-8 to 1	20c	50	200
62	3-8 to 2	25c	50	200
63	3-8 to 3	30c	50	200

Can be
 Assorted

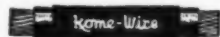
THE GILLETTE-VIBBER CO.
 NEW LONDON, CONNECTICUT.

COPPER WIRE

Bare and insulated for every kind of electrical work.

COPPER RODS

TROLLEY WIRES



ROME WIRE COMPANY

Main Plant and Executive Office, ROME, N. Y.

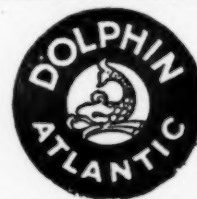
"Diamond" Branch

BUFFALO, N. Y.

District Sales Offices:

NEW YORK
 50 Church Street
 CHICAGO, ILL.
 14 E. Jackson Blvd.

DETROIT, MICH.
 25 Parsons St.
 LOS ANGELES, CAL.
 J. G. Pomeroy, 336 Azusa St.



ATLANTIC Insulated Wires

Atlantic Insulation is notable for its dependability and maximum service.

DOLPHIN, Code; TRITON, High Grade; and NEPTUNE, Extra High Grade, are three widely known and extensively used Atlantic Wires.

If you want to build or hold a reputation for quality work, see that "Atlantic" goes in the job.

Price lists and discounts upon request.

ATLANTIC

Insulated Wire & Cable Company

New York, N. Y.,
 52 Vanderbilt Avenue.

Factory:
 Stamford, Conn.



A Selling Plan that will move fans

Nation-wide newspaper advertising and a moving window display of compelling attraction, are the outstanding features of the dealer's selling campaign for

G-E Fans in 1922

Never has more complete cooperation with local dealers been arranged for any electrical specialty. No fans offer easier profits during 1922 than the G-E line because of this splendid support that is being offered dealers.

The details of the G-E 1922 fan merchandising plan are given in the January number of the G-E Advertiser. If you have not received your copy write us or the nearest G-E distributor.

**For Complete List
of G-E Fan
Distributors
See Page 4**

General Electric Company

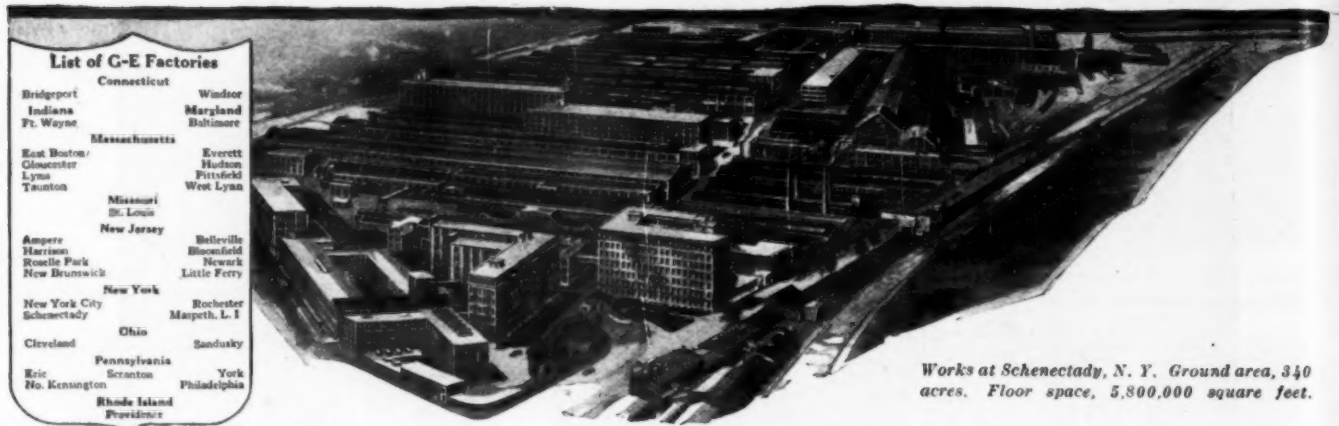
General Office
Schenectady, N.Y.

Sales Offices in
all large cities

32B-84

Where to Get G-E Service—

Quick service is best obtained from the nearest G-E sales office, distributing jobber, or foreign representative



List of G-E Factories		
Connecticut		
Bridgeport		Windsor
Indiana		Maryland
Ft. Wayne		Baltimore
Massachusetts		
East Boston		Everett
Gloucester		Hudson
Lynn		Fitchfield
Taunton		West Lynn
Missouri		
St. Louis		
New Jersey		
Ampers		Belleville
Harison		Bloomfield
Roselle Park		Newark
New Brunswick		Little Ferry
New York		
New York City		Rochester
Schenectady		Masspeth, L. I.
Ohio		
Cleveland		Sandusky
Pennsylvania		
Eric		Scranton
No. Kensington		York
Rhode Island		Philadelphia
Providence		

Works at Schenectady, N. Y. Ground area, 340 acres. Floor space, 5,800,000 square feet.

For Business in the United States

G-E Sales Office	G-E Distributing Jobber
Alabama, Birmingham.....	Matthews Elec. Supply Co.
Arizona, Phoenix.....	
Arkansas, Little Rock.....	
California, Los Angeles†...	Pacific States Electric Co.
California, Oakland†.....	Pacific States Electric Co.
California, San Francisco‡...	Pacific States Electric Co.
Colorado, Denver†.....	The Hendrie & Bolthoff Mfg. Sup. Co.
Connecticut, Hartford.....	
Connecticut, New Haven.....	
Connecticut, Waterbury†...	New England Eng. Co.
District of Columbia, Wash- ington	National Elec'l Supply Co.
Florida, Jacksonville.....	Florida Elec. Supply Co.
Florida, Tampa†.....	Florida Elec. Supply Co.
Georgia, Atlanta‡†.....	Carter Electric Supply Co.
Georgia, Savannah†.....	Carter Electric Supply Co.
Illinois, Chicago‡†.....	Central Electric Company Commonwealth Edison Co.
Indiana, Fort Wayne.....	
Indiana, Indianapolis.....	Indianapolis Elec. Supply Co.
Indiana, South Bend†.....	South Bend Electric Co.
Indiana, Terre Haute.....	
Iowa, Des Moines.....	Mid-West Electric Co.
Kentucky, Louisville.....	Belknap Hardware & Manufactur- ing Co., Inc.
Louisiana, New Orleans....	Gulf States Electric Co., Inc.
Maryland, Baltimore.....	Southern Electric Co.
Massachusetts, Boston†...	Pettingell-Andrews Co.
Massachusetts, Springfield.....	
Massachusetts, Worcester.....	
Michigan, Detroit	Frank C. Teal Company
Michigan, Grand Rapids.....	
Michigan, Jackson	
Minnesota, Duluth	Northwestern Elec. Equipment Co.
Minnesota, Minneapolis†§...	Peerless Electrical Co.
Minnesota, St. Paul†.....	Northwestern Elec. Equipment Co.
Missouri, Joplin†.....	
Missouri, Kansas City†...	The B-R Electric Co.
Missouri, St. Louis‡†.....	Wesco Supply Company
Montana, Butte†.....	Butte Electric Supply Co.
Nebraska, Omaha	Mid-West Electric Co.
New Jersey, Newark.....	Tri-City Electric Co., Inc.
New Jersey, Trenton.....	
New York, Albany†.....	Havens Electric Co., Inc.

G-E Sales Office	G-E Distributing Jobber
New York, Buffalo.....	Robertson-Cataract Elec. Co.
New York, Elmira.....	
New York City‡†.....	E. B. Latham & Company Royal Eastern Elec'l. Sup. Co. (Also Borough of Brooklyn and Jamaica, L. I.) Sibley-Pitman Elec. Corp.
New York, Niagara Falls.....	
New York, Rochester.....	Wheeler-Greene Elec'l. Sup. Co.
New York, Schenectady.....	
New York, Syracuse.....	Mohawk Elec'l. Sup. Co.
North Carolina, Charlotte...	Elec. Supply & Equipment Co.
Ohio, Akron	
Ohio, Cincinnati†.....	The F. D. Lawrence Elec. Co.
Ohio, Cleveland	Republic Electric Co.
Ohio, Columbus	The Erner & Hopkins Co.
Ohio, Dayton	The Wm. Hall Electric Co.
Ohio, Toledo	W. G. Nagel Electric Co.
Ohio, Youngstown	
Oklahoma, Oklahoma City†	Southwest G-E Co.
Oregon, Portland†.....	Pacific States Electric Co.
Pennsylvania, Erie.....	
Pennsylvania, Philadelphia‡†	Philadelphia Electric Company Supply Department
Pennsylvania, Pittsburgh†...	Union Electric Company
Rhode Island, Providence.....	
South Carolina, Columbia†...	Perry-Mann Elec. Co., Inc.
Tennessee, Chattanooga....	James Supply Company
Tennessee, Knoxville.....	
Tennessee, Memphis.....	Electric Supply Company
Tennessee, Nashville.....	
Texas, Dallas†.....	Southwest G-E Co.
Texas, El Paso†.....	Southwest G-E Co.
Texas, Houston†.....	Southwest G-E Co.
Utah, Salt Lake City†.....	Capital Electric Company
Virginia, Richmond.....	Southern Electric Company
Washington, Seattle†.....	Pacific States Electric Co.
Washington, Spokane	Pacific States Electric Co.
Washington, Tacoma.....	
West Virginia, Bluefield	
West Virginia, Charleston	
Wisconsin, Milwaukee.....	

For Hawaiian business address Catton, Neill & Company, Ltd., Honolulu.

†No G-E Office ‡Warehouse §Service Shop

Distributors for the General Electric Company Outside of the United States
INTERNATIONAL GENERAL ELECTRIC COMPANY, INC.
120 Broadway, New York, N. Y. Schenectady, N. Y.

General Electric Company
General Office Schenectady, N.Y. Sales Offices in all large cities

THE RESOLUTION

Whereas, There is need of words to designate our business and activities; and

Whereas, It is proper that we should deliberately add to our vocabulary such properly derived words as are required; now therefore, be it

Resolved, That the following words be adopted as recognized by us with the meanings attached:

NATIONAL ELECTRAGIST

FORMERLY ELECTRICAL CONTRACTOR-DEALER

(Trade Mark)

Official Journal of the

National Association of Electrical Contractors and Dealers

Publication Office: 11 Liberty St., Utica, N. Y.

Editorial and Business Offices: 15 West 37th St., New York City

THE NEW WORDS

Electragy—Name of the trade or business of Electrical Contractor-Dealer.

Electragist—A person conducting such a business.

Electragician—A person working at the business.

Electragize—A verb—to work at the business—or to provide electrical equipment.

Electragic—An adjective—relating to the business.

Electragian.

Electragial.

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The New Year

At this time everybody congratulates us. We congratulate everybody else. Let us all do it, but let us stop doing it automatically, and carefully collate the specific reasons why we all should be so full of felicity.

No matter what the past year has brought us we should be glad to leave it behind. If it comprised a nonsuccessful business period, that is a reason to be glad to have done with it, in order that a start may be made on a new one with hopes for better things. It at least gave us experience which should prevent repetition, and even though dearly bought, that experience now becomes an asset to apply on future productivity.

Prosperity never means standing still, and if the past months have brought prosperity we should be glad to leave them behind, because prosperity is also an asset which will compound itself if judiciously applied in the year to come.

We are a year further away from the war. Each additional year will lessen war's ensuing troubles. Therefore we gladly let go the last and welcome the new year.

An authority has said, "So long as a man is constructive so long is he young." The business world is said to be in a state of reconstruction, and therefore it is young. The electrical industry is indubitably one of construction, therefore it too is young. The electrical contractor-dealer is so essentially a constructor that he also is young.

Youth is the time of happiness—health—vision—ideals. To youth all things seem possible. The year is new and young, and we have it before us in which to accomplish great possibilities—bigger and better things.

We electragists are young with the year, hence we are congratulatory.

Hail! The New Year! And a Happy New Year to all!

Turning the Proverbial New Leaf

The new leaf is only the homely old name for what the modern analyst terms introspection.

Every business man ought to have a sort of fiscal mental housecleaning, and January first or thereabouts is an appropriate time for the electragist to brush up his cobwebby wits and use his figurative vacuum cleaner.

Any business man may procure a specialist to come in and analyze his business, and furnish him with imposing

looking charts which will show where each item of income and outgo are in accord or at variance.

Efficiency today is an art and a science as well, since there are mathematical rules to be mastered which must be as prescriptively exact as those used by the architect.

With introspection it is different. No wage or fee can procure a specialist who can show adequate reasoning for another's intricate mental process. Each man within himself is his own efficiency expert and should annually, at least, take time for honest looking inward and backward into dusty mental corners, where left offs have been too hurriedly pushed. He should send to the final scrap heap the accumulated piles of discarded ideas. He should clear off the shelves where good intentions have been stored, look them over carefully, and put to immediate use the best of them, classify the others, and remembering these, never let one go to ultimate destruction.

He should polish the greatest of household treasures—ambition, generosity and tolerance, and set them out where they may be seen often, as they were so easily before greed, selfishness, and false pride were acquired in which to masquerade with all the world in the awful debauch of war.

Clear the mental house of all horrors and past mistakes. Let introspection turn the new leaf, a clean sheet on which to begin a new year's record of better business men and resultant better business.

Necessity of Business Records

Accounting is not a new discovery, nor is it the result of a deep laid plan to compel the poor, tired business man to do more work.

It is quite likely that accounting began in the dawn of man's intelligence, for coincident with that was the beginning of trade—barter and exchange.

When primitive man made a dicker for two dozen choice hides and only one dozen came to hand, it is reasonable to suppose that he made a record of the transaction by chiseling in the stone wall of his abode the amount that was due him.

In the glacial epoch it is presumed that the transactions were recorded on cakes of ice and soon were melted by the sun. Too many electragists today are transacting business on the glacial period methods.

Accounting is merely recording—making entries on records; registering debits and credits; entering on paper or

in a book a record of things bought and sold, the names of parties to the transactions, dates, costs, prices, and payments. There is nothing else to it.

The only way in which any business can be properly conducted is by keeping accurate records of all transactions. Even the school boy at play keeps a record of his transactions—a tally sheet or a score card for recording the results of games. Entries may be made on a notched stick, or by marks in the mud, but the record is there. It does away with bickering and wrangling.

The New Business Record recently issued by the National Association of Electrical Contractors and Dealers accomplishes the same result. It prevents misunderstandings and obviates disputes. It removes all chances of guessing at profits. It largely overcomes foolish buying and slow paying practices. It eventually will make a better business man of every user.

The New Business Record is designed to supply the needs of the contractor-dealer who cannot afford the services of a bookkeeper. It is simple, practical, and convenient. It is easy to start and as easily kept up, as it requires no expert knowledge of bookkeeping.

The National Association also issues the Standard Accounting System, which is being used by the larger contractor-dealer concerns who maintain accounting departments with bookkeepers in charge. This system is being successfully operated throughout the country; but there is a demand for a simpler and less expensive set for the smaller business; hence the introduction of the New Business Record.

If the electragist should be in doubt as to the necessity for keeping records of his business transactions, let him ask the credit manager of some company that he does business with—or the supply jobber's salesman. These men fully appreciate the difference between careless and careful methods of business; and they both are helping to make better business men in the contractor-dealer branch of the electrical industry.

January is a good month to start this New Business Record. Send to National Headquarters for further information.

Electrical Industry Stands Alone

At a recent meeting of the National Manufacturers' Association held in New York City, there was much discussion as to the advisability of establishing an American valuation on imports. During this meeting a speaker made the statement that the United States Government in a given period had lost close to forty millions of dollars by under valuation of foreign made dutiable goods.

Of course this indicates worse than so-called sharp practice in business. It is positive trickery and dishonesty, and with such an estimated sum involved it plainly shows the complicity of many individuals in various industries. This association, which hopes to find means to rectify this state of affairs, is composed of representative manufacturers of almost every commodity known to United States commerce, and to a man they have been, or expect to be, hit by this deplorable condition of unfair competition wherever their "Made in the U. S. A." product has a foreign prototype.

Therefore, there now is going on a nation wide agitation to formulate plans and find means to extirpate a growth of

such viciousness, which if allowed to spread further would soon undermine the strength of any present healthy business, and among smaller and weaker organizations it would mean total extermination.

At this time of attempted resumption of trade, their exigencies are admitted, but the efforts of foreign producers are frantic and while they may or may not realize the result here, what we regret to admit is that they are finding it very easy to make a business connection with an element that stops at nothing so long as the dollars roll in.

The danger signal is out. We can sympathize with the sufferers in an epidemic, but nevertheless we must avoid contagion. Self preservation is the first law of business, as it is of nature.

The electrical industry collectively ought to congratulate itself on being what it is. Every well informed electragist knows the almost next to nothing percentage of foreign electrical goods and material brought into this country compared with the output of factories in operation in the United States. What other great industry has so little to contend with in the way of foreign competition? And inversely, what other industry can show such a preponderating percentage of exports?

The answers to these questions in themselves should give every electragist additional cause for business confidence. The facts and figures showing the enormous number of building and rebuilding operations now going on, and those planned for the near future, show clearly that there can be no falling off in demand for electrical materials and appliances for a long time to come.

Because of these facts each electragist is more free to go ahead with business development than many merchants and contractors in other lines. He should make haste then to get into the thick of things now, in as large a way as is possible or commensurate with his available capital, and he should make plans for continuous future growth. He should create and encourage all healthy competition.

The greatest electrical field the trade has ever known is being thrown open, and it is big enough for everybody who is far seeing enough to stake out a claim, to dig, to plant, to cultivate, and then to reap a goodly harvest from this vast open tract of business opportunity stretched all about on every side.

Use of Trade Information

A decision which is of unusual interest to trade organizations was recently rendered by Federal Judge Carpenter in the district court of the United States, for the northern district of Illinois, eastern division.

The government charged that through an association of linseed oil crushers a conspiracy existed to restrain interstate commerce and fix prices, and petitioned for an injunction. This the court denied for want of equity, showing that the collection and distribution of trade information does not necessarily imply that prices are fixed or enhanced.

Judge Carpenter delivered these words of wisdom relating to present day competition in business:

If it is lawful for dealers to get together in an exchange and provide for a dissemination of the prices obtained on actual sales, why should it be unlawful for those producers and dealers in lines where no public exchange has been established, to make some provision for disseminating in-

formation of market value or prices? To put it in another way, why should they be limited to the dissemination of the market prices of yesterday, but not those of today.

In order to obtain efficiency in business, as well as in any other human activity, it is necessary to have reliable, immediate and adequate records. With the progress that has been made in the last century it is not to be expected that business alone stood still.

In the old days when at noon the business men of the community met in the village blacksmith shop, or in the evening met at the corner grocery, a man was supposed to carry in his head all the facts in regard to his business and never to disclose them to a competitor. Adequate systems of accounting had not been devised. Overhead as a cost element in operation was unheard of. Business was run by the rule of thumb. Such days have gone by. The commercial enterprise today which is not so managed that its head can at any time know how large is his stock, the volume of his sales, the cost of his operation, and the amount of his profit and loss, sooner or later will be distanced by his competitors.

It is because business is so much more complex, the volume so much greater, the margin of profit on single transactions so much less, that the merchants of today must have at instant command reliable and adequate information, immediately to be secured and more or less permanent in form. Business is no longer a game of chance, but a matter of scientific calculation.

A merchant cannot compete with another merchant unless he knows what he must compete against. A knowledge of what his competitor is charging is the first step in competition. It does not follow because one man knows the price which his competitor is asking, and he then fixes the same price, that this action is by agreement. If his competitor charges a high price he naturally will ask the same price if he thinks he can get it. It is absurd to imagine that every merchant does not endeavor to keep posted on the prices asked by his competitor. If he fails to keep posted he will find himself losing money. If his prices are too high his customers leave him. If too low, he fails to reap the profit to which he is entitled.

The Government cannot seriously contend that it is the duty of every merchant to guard against his competitor, finding out what he is charging. It would be an impossibility. Nor is it wrong for a merchant to endeavor to find out what his rivals are charging. If he cannot get it directly and easily, he will necessarily get it indirectly and at a

greater expense and slowly. He must know in order to conduct his business properly; nor does the public profit by the mistakes of a merchant charging too much on the one hand or too little on the other, for want of such information. The mistakes would in all probability fall equally on either side.

Read at Home for Profit

Education comes largely from reading, as well as from observing. The man who is best informed is the man who reads most. It matters not whether he follows a profession or a plain, every day business, extensive reading on his particular line is sure to bring additional dollars to his door.

"The Man Who Succeeds, is the Man Who Reads" would be an appropriate slogan for publishers of business literature. It fits the modern magazine of business, which has become a high type of literature. The days of the old boiler plate trade papers have past. The business journal of today is made up of useful information. It is instructive, educational, informative—highly profitable reading.

The business institution that does not subscribe to several business publications in these days of choice business literature, cannot lay claim to being progressive; and unless everyone associated with that institution takes the time to read his trade magazines, he is not doing his full duty to himself, nor to the industry of which he is a part.

However, the busy place of business is not the proper place to read. The trade magazines and other printed matter pertaining to business should be taken home, carefully perused, marked to call particular attention to certain paragraphs or articles, and promptly returned to the office, store, or shop for others to read. The place of business will become more profitable when such treatment is given to all of the printed literature that reaches it.

There are not so many magazines published in the electrical industry that each and every person who is in any way associated with that industry should not read all of them—particularly those that give him a keener insight into the part he plays in the industry, be it either a large or a small part.

When you subscribe for your business magazine—which by all means you should do—have it sent to your home address. Read it at home, study it there, and pass it along to others, that all may profit by its precepts.

The National Electr^{ag}ist hereby extends to its many friends—and to its enemies, if there be such—its hearty good wishes for a prosperous and happy New Year

Figuring the Selling Price

A New Table for Finding the Percentage to Add to Prime Cost of Work to Provide an Actual Profit

No matter what method is adopted to arrive at the selling price of a contract job no profit exists until its proportion of the cost of operating the business is taken care of. This proportion is the *overhead* percentage and in that lies one of the greatest pitfalls for many contractors. It must include *all* of the expenses of business operation, except productive labor and materials. It must provide for replacement in the constant depreciation of tools, equipment, autos, etc.; for wastage, leakage and depreciation in stock of materials; as well as for every current item of operating expense. This total operating expense divided by the gross business done gives us the third item in the cost of every job—labor, material and overhead.

But that overhead percentage is the percentage of gross sales and not of costs, and therefore must be figured on the selling price of each job and not on the sum of labor and materials only. And there is the pitfall for many a man. The selling price being unknown he adds his overhead percentage to the cost of the job as he figures it and his hoped for profit at the end of the year does not materialize.

The accompanying table provides an instant reference for finding the true percentage which must be added to cost of labor and materials to show any actual *net profit* desired from 2½% to 20%. It covers a range of *overhead costs* from 10% to 32½%. Very few contractors are operating on an overhead of less than 20%; the contractor who thinks that he should give careful

study to his figures to see that he has included every cost which affects his business over long periods.

The average overhead percentage for the contractor-dealers of the country, as shown by the figures obtained through the National Association's questionnaire for 1920 was 23.63%. This figure will undoubtedly be higher for 1921 because of poorer business conditions.

This table for figuring the selling price should be in front of every contractor or estimator who figures the selling prices to be submitted to the customer for contract work. But whatever system is used to determine the selling price, apply this simple test to every price before you quote it to your customer—deduct your percentage for overhead from the selling price and see if you are satisfied with what remains.

TABLE FOR FIGURING THE SELLING PRICE

Overhead Percentages (Cost of Operating Business divided by Gross Sales)

	10%	12½%	15%	17½%	20%	22½%	25%	27½%	30%	32½%
2½%	15	18	21	25	29	33	38	43	48	54
5%	18	21	25	29	33	38	43	48	54	60
7½%	21	25	29	33	38	43	48	54	60	67
10%	25	29	33	38	43	48	54	60	67	74
12½%	29	33	38	43	48	54	60	67	74	82
15%	33	38	43	48	54	60	67	74	82	90
17½%	38	43	48	54	60	67	74	82	90	100
20%	43	48	54	60	67	74	82	90	100	110

Percentage of mark-up to add to cost of labor and materials.

NOTE:—In the above table the percentages shown are the nearest whole numbers, omitting fractions.

Explanation:—If your cost of operating business (overhead) is 22½%, and you desire a net profit of 15%, add 60% to the cost of labor and materials.

EXAMPLE:

Cost of labor and materials.....\$100.00
Add 60% to cost.....60.00
Selling Price\$160.00

Proof:—Labor and materials.....\$100.00 = Cost
22½% of \$160.00.....36.00 = Overhead
15% of \$160.00.....24.00 = Profit

Selling Price\$160.00

Too Many Retailers

Alvin E. Dodd of the United States Chamber of Commerce, in a recent article in the *Nation's Business*, says:

"There may be truth in the charge that there are too many retailers. Let us look at some figures. There was in 1920 a grocery store to every 218 persons in the United States, a total of 484,092 grocery stores. Statisticians used to figure five persons to a family. This is perhaps too many. Let's say four and a half. That gives us a grocery store for every 48 families, and on the

estimated family budget each retail grocer has an annual business of only \$9,400. Those figures talk for themselves."

Mr. Dodd states that other retailing lines are almost as bad as that of the grocery trade. Figures of the electrical industry, however, show that the retailer's business is progressing; which means that so long as the electragerist keeps abreast of the times in his business policies and dealings and conforms to the standards of the true meaning of the word electragerist, there will be no occasion for anybody's failure, which, as

Mr. Dodd states, is the way this condition takes care of itself.

Only a Few

John Wanamaker says there are few of us who have never found a man in the course of a lifetime who did not know something worth knowing of which we were ignorant.

For men to be gruff and offish with each other without reason is not only bad manners, but deprives them of the privilege of helping each other to climb the high hills that often confront us.

How to Figure House Wiring

BY SIDNEY W. BISHOP

Executive Manager of Electrical Cooperative League
of Denver Gives Valuable Cost Data in This Article

How many contractors know what each job performed by them or their firm actually costs? How many wiring men are there who figure the net cost of each job after the work has been completed? How many electricians keep the proper records to aid them in answering these questions?

The need for more accurate knowledge by many electrical contractors is responsible for the very unsatisfactory condition of the wiring business in many cities. The experience of the contractors in a large western city brought out by their local association demonstrated either erroneous methods of calculation or a tendency to overlook the elementary costs entering into a job.

In that community, as in many, the type of work was classified according to the nature of the structure in which the work was being done. Bungalow or cottage work, houses of two or more floors, stores and garages, and buildings and miscellaneous structures such as halls and hospitals, comprised most of the work.

In the housewiring group there was found to be a wide variance in estimated wiring costs, ranging from \$3.20 to \$5.00 per outlet. The difference in bids on new work coming under this classification led to a careful analysis of the whole proposition, the object of the study being not to see how much profit could be made in such work but rather to determine the actual cost of the job and to average it per outlet.

A number of the leading contractors, through their local association, appointed one member to prepare the data on a representative piece of cottage work. He was able to secure all the figures on such a job done by his firm several weeks previous. No consideration was given to the estimated cost of the job nor the competitive element in securing the work, but instead the figures in dollars and cents represented the cost of material and labor.

Overhead costs as well as profits were left for final consideration after the prime costs had been established.

At the time the problem was discussed, there was unanimity of opinion as to the cost of material according to then going jobbing prices. Labor charges were generally accepted as rep-

resenting an average requirement of time for performing such work. Several questions were raised later as to the incompleteness of the material bill, but at the time of discussion it was felt that the items charged were fair and of proper proportion.

The particular job under consideration was a five-room cottage with the following outlets:

- 11 ceiling outlets,
- 7 wall switches,
- 1 convenience outlet,
- 1 door bell (battery).

The material, labor and miscellaneous charges entering into the job follow:

190 ft. conduit.....	\$11.40
5 9-8 boxes.....	.70
5 plate rings.....	.60
4 ceiling plans.....	.40
7 square boxes.....	1.19
2 3-gang covers.....	.34
4 1-gang covers.....	.48
88 lock nuts.....	.88
44 bushings.....	1.10
8 fixture studs.....	.40
2 pounds straps.....	.25
36 screws.....	.15
1 2-cir. fl. type M. cabinet.....	4.25
1 conduit.....	.25
1 meter board.....	.75
4 fuses.....	.25
1 ground clamp.....	.20
1 bell.....	.45
2 batteries.....	.68
1 button.....	.20
100 ft. bell wire.....	.35
25 ft. No. 12 wire.....	.25
450 ft. No. 14 wire.....	3.10
7 switches.....	1.75
7 plates.....	.84
1 fl. receptacle.....	.21
1 fl. receptacle plate.....	.28
Solder and tape.....	.35
16 hours labor (rough).....	16.00
4 hours labor (finish).....	4.00
4 hours labor (helper).....	1.60
Permit.....	3.00
Total.....	\$56.65

It should be borne in mind that the total of \$56.65 represented only the material and labor installation costs. Overhead and profit must be figured to arrive at the selling price of the job. For the item of overhead 23% was taken as an arbitrary figure inasmuch as it represented about the national average of the cost of doing business, which on investigation was found to be about the same in that city.

As Larry Davis of the National Association so aptly explains it, the selling price is all one can get for a job and it therefore represents the whole or 100%, which with the deduction of an overhead of 23% and a

desired profit of 10% (a purely arbitrary profit) would leave the cost of material and labor equivalent to 67%. In figures this particular problem appeared thus:

67) 56.65 (.8455 which is 1%	
53.6	
3 05	\$84.55 = 100%
2 68	or the selling price
	of the job.
370	
335	
350	

The calculation can be proven by substitution of figures in the formula:

Selling Price	Cost	67%	\$56.65
	Overhead	23%	19.44
100%	Profit	10%	8.46
			100% \$84.55
			Selling price

If this job had been *erroneously* figured on the cost instead of the selling price the overhead would have been figured as \$13.03 and the profit as \$6.97, or a total of \$76.65 as the selling price.

We see from the previous figures in which the overhead of 23% was correctly figured on the selling price that the gross cost of the job was

Prime cost.....	\$56.65
Overhead.....	19.44
Gross cost.....	\$76.09

If this job were sold at \$76.65 it would have shown an actual profit of only 56 cents! This method is being followed every day.

Who wants to do business without profit? If it is done, ignorance is responsible. All of which leads us to the nub of the problem, viz., what is a fair price per outlet in small house work? Again take the figures:

20) 84.55 (4.22 or the price for in-	
80	stalling each outlet.
4 5	
4 0	
55	
40	
15	

We see then that an approximate price of \$4.22 for each outlet for the type of work discussed was a logical and average figure. The moral of the problem is: What was the contractor doing who figured his price much less and how long will he last doing business in that manner?

Unfortunately the man who figured such jobs a full dollar per outlet under this figure did not attend the meeting at which this subject was discussed. Had he attended, an explanation might have been forthcoming as to methods employed in putting over such a cheap

job. As it was, all the contractors taking part in the discussion were then in possession of sufficient data to show that many previous jobs had been figured erroneously.

The problem gave them suggestions as to the determination of actual costs

on each job. It showed several of them that their estimates were materially upset through insufficient allowance for overhead.

It also demonstrated the absolute necessity of keeping accurate time and material records.

Getting the Incompetent Out of Business

BY LAWRENCE MACQUEEN

Assistant Professor of Finance, University of Pittsburgh,
Gives Some Interesting Angles on This Unique Subject

Some generations ago when our forbears committed themselves very definitely to the *laissez faire* doctrine, business was displaying a natural reaction against excessive interference on the part of government and trade guild. As was to be expected the pendulum swung too far.

Every barrier was swept aside and the only requirements, if one planned to enter business, were the desire to do so and a certain amount of capital, owned or borrowed. These very simple conditions remain practically unmodified today.

In the professions rather stringent restrictions have been made which are familiar to all. No one today expects to practice medicine, law, dentistry and the like unless he is able to pass examinations intended to test the technical knowledge of the candidate. Further than this it is interesting to note that before a charter is granted to a new national bank the applicants must show the need for this new institution and also present certain character references bearing upon the standing of the officers.

Business a Complex Relationship

Business is becoming an increasingly complex relationship, even more complex perhaps than many of those now engaged in it ever realize. The injuries which may be done and the losses which may be sustained as a result of inefficiency and ignorance can only be approximated but they are undoubtedly very great.

The keenest business analyst would have difficulty in estimating the total. Why then are there no requirements made of those who desire to enter business, no proofs of competence and technical knowledge?

Two answers might be made. There are those who deny that there is any science of business, knowledge of which would tend to increase the probability of

success. Such individuals look upon experience as the only method of securing technical knowledge necessary to the successful conduct of a business.

Even granting that this contains some truth, is it not evident that this necessary experience ought properly to be gained before entering into an independent business relationship with the public rather than afterward? The principal reason why such requirements are not made, however, is probably due to the general failure on the part of the public to appreciate the results of incompetence in business.

Some Startling Statistics

How much of a factor is incompetence? Taking 1918 as a typical year, there were 71,907 active corporations in the United States which earned nothing. Among those earning an income, 118,370 earned less than \$5,000. Combining the two, 190,277 corporations, or about 69 percent of the total, earned nothing or less than \$5,000. Perhaps two inferences may be drawn from these figures. Either there are too many businesses or else there is not enough intelligence and foresight in the management of business.

Examine the statistics of failures. Figures published by mercantile agencies regularly attribute not less than one-third of all failures directly to incompetence. Probably at least 60 percent of all failures are due directly or indirectly to lack of business knowledge since lack of capital is given as the cause of about 30 percent of failures. Stated more accurately, this would read "over extended" credit and can properly be regarded as a mark of insufficient business acumen.

A Great Loss In Money

If no other losses were considered, the loss sustained annually in money as a result of business failures is a large

item. During the first nine months of 1921 more than 13,500 failures were reported. On this basis there will probably be almost 17,000 for the year when the statistics are accurately compiled. Through September the amount of these failures had totaled over \$443,000,000. An estimate of \$525,000,000 for the year would be conservative.

A loss of half a billion dollars is inconsiderable, however, as compared with the costs of maintaining the army of incompetents who are never quite squeezed out by failure, especially when the intangible effect on business stability resulting from their activity in the business world is taken into consideration.

In view of this annual tax on business is it harsh or unjust to ask of those who would enter business that they give evidence of their ability together with some economic justification of the enterprise which they wish to undertake? Such justification might well take the form of some special advantage due to improved methods of production—an unusually desirable location, a patent of merit, lower operating costs—any one of the many factors, the possession which generally holds out to the possessor some promise of future success.

Certain Amount of Training Necessary

The necessity for at least a measure of technical knowledge is amply illustrated by the losses sustained by the public and the trade through the entrance into the electrical business of many who are not sufficiently trained to render either safe or satisfactory service.

If neither sufficient business nor technical knowledge is possessed and there is no economic justification for the enterprise, why begin upon a course of action which will almost certainly end

in disaster to the individual or firm involved, and in loss to society?

Should Have Reason

Surely mere desire to enter some business is no adequate reason, especially since it has been pointed out

that most of us very perversely desire to do those things about which we know the least. The possession of sufficient money to launch the business is patently not reason enough.

Until that day comes when some method is devised of getting the incom-

petent out of business as speedily and as easily as he can now get into business, is it not just that all those who desire to enter into this complex and responsible relationship be required to show both cause and capacity as well as funds and the desire?

The Value of Electrical Service Leagues

By REY E. CHATFIELD

How Such an Organization in British Columbia Knit Together the Various Branches of the Industry and Raised the Standard of Whole Profession

The Electrical Service League of British Columbia was formed about a year ago for the purpose of promoting better business methods within the electrical industry to give better service to the public. The league is composed of and supported by the four branches of the industry, viz., central station, manufacturer, jobber, and contractor-dealer.

Last July the league engaged a secretary-manager to do the field work and to carry on the activities of the organization. Early in August a survey of conditions in the electrical industry was made for the purpose of determining the proper method of attack of the problems then confronting the industry as a whole.

Cut-throat competition between contractor-dealers themselves, between curbstone contractors and legitimate contractors, and between certain wholesalers and the contractor-dealers had produced a condition of chaos which is difficult to describe.

With the exception of a small group of contractors loyal to the Vancouver Association of contractor-dealers, work was being taken with no regard for cost either of material or labor. Frequently jobs were let for less than the net cost of the material required. Such a condition forced the contractor-dealer operating on sound business basis to refuse competitive work, and this falling off in competitive work reduced the shop forces of the various organizations.

Standards Became Lowered

Driven by the necessity of earning a living the erstwhile journeyman employe became a curbstone contractor. The curbstoner developed in this fashion had no knowledge of business methods and his competition forced prices further down the scale. The wholesaler and the manufacturer of standard material lost the support of

the contractor-dealer, who sought to meet the competition of the curbstone operator by the substitution of sub-standard materials of foreign manufacture for standard material. As a result, the legitimate wholesaler was competing with the contractor-dealers for the business of the industrial plants and the shopping interests.

This condition obtaining in the trade it was deemed necessary to impress upon the contractor-dealers and the wholesalers three things:

First: Bring the contractor-dealer to a realization of the fact that he was in a legitimate business and should conduct his business along legitimate lines.

Second: Bring the wholesaler to a realization of the fact that the contractor-dealer was a legitimate business man conducting a legitimate business and as such was entitled to certain protection as against the itinerant curbstone contractor as well as against the individual consumer.

Third: It was necessary to teach the contractor-dealers to support the wholesalers who were willing to support them; in other words, to teach the dealers to play the game.

The Three Problems Solved

To accomplish the first of these objectives, viz., to convince the contractor-dealer that he was conducting a legitimate business, it was necessary to impress upon him that he owed to the public a definite service to give a dollar's value in good workmanship and prime materials for every dollar spent by the public.

In order to give sound value it was incumbent upon him, as a legitimate contractor-dealer, to handle only standard merchandise and to use standard material in his wiring installations. Realization of this automatically had the effect of accomplishing, to a large extent, the third objective, teaching the contractor-dealer to support the legiti-

mate wholesaler who was willing to play the game.

The second objective, that of bringing the wholesaler to a realization of the fact that the legitimate man must have a certain amount of protection, has been easily accomplished.

Indiscriminate selling to consumers and to the fly-by-night wireman, which brought about the chaotic condition existing in the industry, made credits bad. The wholesalers knew this and decided it was sound business to protect the legitimate contractor-dealer. By protection I do not mean price differential, but instead of competing with the contractor-dealers for the sale of appliances, power consuming devices and wiring supplies, rather to assist the contractor-dealer to get the business.

Standards Were Raised

Today the wholesalers have defined industrials who are entitled to wholesale list prices as those firms which habitually maintain on their payroll an electrician for the installation and maintenance of their electrical equipment. Other industrials must obtain supplies through the contractor-dealer.

This has been a long stride in the right direction and has made the contractor-dealer realize that the wholesaler is supporting him.

From the wholesaler's point of view this is sound business in that it enables the contractor-dealer to get a legitimate price for merchandise or material which goes into an installation and so improves the dealer's credit standing. The prohibition of direct sale to the consumer at wholesale prices has also done much to curtail the activities of the curbstone contractor.

To accomplish these objectives it has been necessary to really educate the individual firms in the industry. For a period of some months the contractor-dealers held open meetings to which all contractors were invited. At these

meetings business ethics, the legitimate lines along which a business should be conducted and the cost of operation of a business or overhead, have been discussed and explained.

Educational Methods Helpful

These discussions were followed up by talks with the individual contractor-dealers. Through this educational campaign a large number of the contractor-dealers now know what it costs them as individual firms to operate their own business; they also know how to estimate and price a job to cover this cost of doing business plus a profit.

As soon as an individual contractor-dealer found out the overhead for his own business he realized that he must get together with his competitors and bring them to a realization of the fact that overhead was legitimate cost and must be cared for in submitting a tender for a job, as well as to discuss other problems peculiar to the contractor-dealer.

As a result of this educational campaign the membership in good standing in the Vancouver Association of Contractor-Dealers has increased 50 per cent since last August.

Merchandise turnover, attractive store arrangement and the value of window display have been explained to the dealers with a result that today the contractor-dealer is watching his purchases so as to obtain the maximum rate of stock turnover. Regular changes in window display have been instituted by the contractor-dealers to correlate the merchandise display with the advertising of the central station and the manufacturers.

In this connection a section of the advisory council of the Electrical Service League of British Columbia, known as the merchandising committee, has outlined a merchandising and advertising schedule for a period of two months. This schedule is a guide to the contractor-dealers for their own advertising and window displays.

Accounting systems have been installed in a number of contractor-dealer establishments, some of which systems were very simple, but which fit the conditions of each organization. At the present time under the secretary-manager of the Electrical Service League of British Columbia, several bookkeepers for contractor-dealers are being taught cost accounting preparatory to the installation of the Standard Accounting System, published by the National Association.

An industrial lighting exhibit is

being built through the combined efforts of the four branches of the industry, viz., central station, manufacturers, jobbers and contractor-dealers, to educate the industry and the industrial managements of the province to the need and value, as well as methods, of obtaining good industrial lighting.

This idea of working together for a common end has knit together the various branches of the industry in a manner to raise the standard of the whole profession and to benefit each of its branches.

Policy of Good Business

Electrical World Says Appliances Should Be Sold at Profit

In its December 3 issue, the *Electrical World* in an editorial offers this sound advice to central station dealers:

One day early this year the sales manager of a certain central station company walked into the office of the president, with a sober face, and said: "I find that some one has stolen \$12,000 out of the cash drawer." The president sat back aghast and asked him how. The answer was that that amount had been lost in 1920 by not charging a proper profit on merchandise sold and on repair jobs done for customers. The money had been lost. Not one thief, but many good customers, had been allowed to help themselves unconsciously out of the company's cash drawer. And this occurs in many cities.

After all, there is no policy involved save one, the policy of good business. For electrical appliances are worthy and popular enough to be salable at a proper price that pays a profit. And business that does not pay its way and a profit is not good business. All the arguments in the world cannot prevail against that simple fact. Why, therefore, should the central station company go on robbing its till with its own hand by selling goods on a losing basis?

The market for electrical appliances today is only opening in the bud. It will increase and develop to proportions now beyond imagination. The central station shop, if policy is right, will sell in growing volume. It can and should be the leading, guiding store in every city, working actively and progressively in a harmonious, helpful coöperation with an increasing number of dealers' stores. For electrical appliances are destined to become standard household equipment and as such staple merchandise that everybody sells. But the first step must be to make each electric store

—central station or otherwise—a store that pays. Under any other policy that store is headed toward the rear. The electrical appliance is going ahead, and he helps most who makes his store prosperous and strong to serve.

Linking Electricity With the Movies

The wise merchant takes advantage of every timely event to increase his sales and one of the best plans, aided and abetted by the astute newspaper solicitor, was that adopted recently by a group of merchants of Helena, Mont. A movie film, "The Old Nest," dealing with a mother and her children, a story that had received considerable national popularity, was scheduled to appear at one of the local theatres.

Accordingly, a full page ad was run in the centre of which was placed in bold letters "The Old Nest" with a picture from the play and a brief resume of the story. Forming a border all around were the ads of a number of local merchants, each one of whom linked up his merchandise with the title of the play. The Helena Light and Railway Company suggested: "Make mother's burdens lighter in the old nest. Buy her an electric washer. Arrange now for a free demonstration."

That the wife of the farmer and stockman is an excellent prospective customer for electric washing machines and other electrical home equipment was demonstrated recently in Spokane, Washington. At the Royal Northwest Stock Show, which drew crowds of spectators from Washington and adjoining states, in the midst of the blooded cattle and sheep and pigs there was a group of booths wherein the leading department stores and electrical dealers called attention to modern household conveniences. In a booth that gleamed with white and gold, Charles Flagg, local agent for the Laundrette, demonstrated that machine. Culbertsons, in a booth of blue and white, featured the Blue Bird washer, and also electric sewing machine motors; The Crescent divided its attention between electric washers and vacuum cleaners; and the Palace, in a large booth fitted up as a drawing room, had an excellent showing of furniture and gave daily demonstrations of the ease with which rugs and draperies could be cleaned by a vacuum cleaner.

All of these firms had electric washers in active operation and invited installations of same on the partial payment plan.

Electricity at the California Industries Exposition

By W. B. STODDARD

Demonstrators Are Kept Busy By the Thousands of Visitors Who Attended This Successful Show at San Francisco

The big civic auditorium at San Francisco echoed with the steps of thousands of visitors from November 20 to December 10, 1921, when the California Industries Exposition was in progress. Reduced rates on the railroads and the perfect weather of a California autumn brought the people out en masse to note the strides California has taken in the industrial world during the past decade. Commensurate with its importance as a factor in twentieth century life was the space taken by the electrical exhibits.

Commanding prime attention, both from the main floor and the balconies, was the 220,000 volt snow type tower, manufactured by the Pacific Cast Steel Company for the Pacific Gas and Electric Company. This great tower extended to the dome of the auditorium and at its base, enclosed by a hedge of pine trees, was the electric exhibit of the company. This included an electric kitchen with complete line of electric equipment and a built-in breakfast room, with table on which were percolator, toaster, waffle iron and ovenette.

Behind the kitchen was an electric laundry. The company also had a large booth, on one side of which was a big copper candy kettle and electric devices for cooking and handling the candy. The second counter was taken up with gas Radiantfires, while the third had literature and diagrams regarding a new type of furnace.

The General Electric Company had a model kitchen floored with lineloum with cream tinted walls and white kitchen cabinet and table. Here was shown an electric range. Overhead was a dome light and beside it one of the drop lights used in most kitchens. A card advised "Nothing to Sell— a demonstration only of the better kitchen lighting." A young man in charge of the exhibit explained the advantage of the clear, soft, shade light in comparison with the glare of the drop light.

On the table were a number of mazda lamps, and a card said:

"Mr. Man.—When you work do you like to work in the dark. No. Neither does your wife. Come in and see how better meals can be cooked when you mazda-light your kitchen."

There were several wall outlets, and on a ledge of the cabinet was an electric iron with cord attached to a wall plug. Several cards beside it contained appropriate suggestions.

The Department of Electricity of the City of San Francisco had three booths with pillars and arches of white lattice-work. To the middle pillar was attached an electric traffic signal invented by the chief of the Department of Electricity.

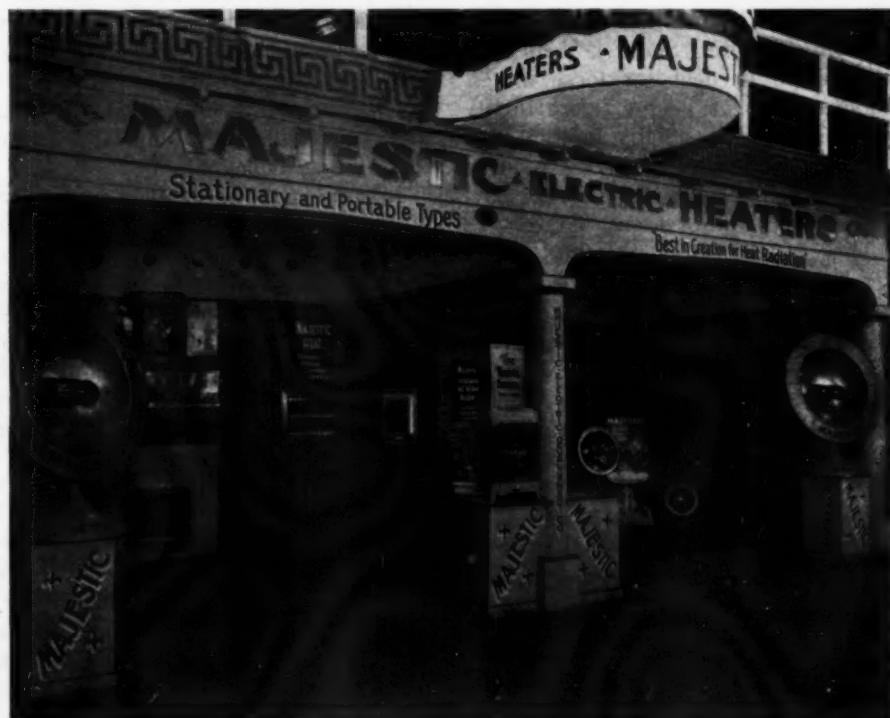
One of the end booths showed an engine house signal board and a comprehensive exhibit of fire fighting appliances. The other end booth showed a police station telephone board. At this booth were a number of silver

trophies won in drills and athletic contests by the local force. The middle section showed an electric fire alarm box, a police telephone box, and other electric devices connected with the departments.

Another interesting exhibit was that of the evening high school of commerce, who had a radio telegraph exhibit, the apparatus for which was manufactured by the students. Daily demonstrations of sending and receiving messages were given by the pupils.

The Majestic Development Company had a large double booth at either end of which were two simulated electric heaters of gigantic size while in the centre were heaters of normal size. In one room were given demonstrations of hot water heaters—hot water at the turn of the faucet; while the other, furnished as a living room, showed a fireplace in which were placed electric heaters of different types.

A third type of heater occupied a



This Booth Attracted a Thousand People Each Day of the Exposition and the Interest Shown Resulted in Many Installations of Majestic Heaters for Residences, Apartments and Other Types of Buildings

niche in the wall. Coupons were given on each day to the visitors and at the close of the exposition the three people holding lucky numbers received electric heaters free of charge.

Demonstrators Kept Busy

The booth of the F. E. Newberry Electric Company was a busy hive of industry, as one young woman was shown operating an electric ironer and another a sewing machine with electric motor. Beside the first was a washing machine busily churning the suds, while a maid by the second figure used a vacuum cleaner. Between the two was a lunch table with electric percolator and as a centrepiece a dish of roses with an electric bulb in the heart of each.

The Western Sales and Mfg. Com-

pany demonstrated a new type of simplified electric washing machine which could be placed in the ordinary stationary laundry tubs. In front was one of the small models, beside which was a big doll in freshly laundered garments, and a card "My clothes were washed in a Sales Company washer."

The Great Western Power Company had a booth in soft tones of gray with green grass rug and wicker furniture. Here were shown an electric heater, hot water heater, and several electric ranges. The firm also lent one of their ranges to the Sperry company, and on it was demonstrated the ease with which cooking could be accomplished by Sperry products and electric ranges.

The Signal Corps of the United States Army had an exhibit of apparatus for telephones and telegraphs for

signaling and field service. Here were shown a radio telegraph outfit complete for sending and receiving messages with aerial and power generator packed on the back of three mules. This instrument can be in active operation three minutes from the time the mules halt—range about 40 miles. They also exhibited a field radio telegraph set of the undamped wave type which recently held communication with ships 1,426 miles out at sea.

The Electric Retail Dealers had two booths in which were shown all manner of electric household equipment. They specialized on waffle irons, cards saying "Waffles baked, not fried. No Grease required. Feed them to the kiddies—They are healthy." Above the booth was a complete list of the electrical firms handling the equipment.

Getting Away From the Bread Line

BY ROBERT A. HARDY

By Classifying Your Prospects You Will Reach Customers Who Have Money to Spend Now

Labor statisticians have told us that there are from three to five millions unemployed in this country these days. Of course this means a very large number of people whose incomes have been reduced greatly or stopped entirely.

A large proportion of these people out of work can only buy the bare necessities of life. Some of them even have to go in debt for these things. Another class of people, more thrifty perhaps, are not actually in want, but as their incomes have been reduced they have stopped all unnecessary buying until the future seems certain.

This is the situation this winter which will affect the retail dealers in many communities almost as seriously as it will the unemployed themselves. How can a volume of sales be kept up when so many people for economic reasons are absolutely not in a position to buy? This is a question which in some measure confronts every dealer this winter.

There is, however, another side to the situation. Let's look at it.

Many Have the Price

Did you try to get tickets for the World Series? Or, the Yale-Princeton football game? Or any other popular public performance going on anywhere in the country? If you were successful

you paid a good price and you considered yourself lucky to get tickets at any price.

Why? Because there were thousands of others who had the price and were only too glad to pay it for something they really wanted. Unless you have reservations ahead you find hard work to get into almost any one of the high-class hotels in the large cities. People are still traveling on extra fare trains and not slowing up to any large extent in spending money.

In spite of the facts about unemployment and hard times, a rather large portion of the public do have money to spend. They are showing no reluctance in spending it for the sports, pleasures and comforts to which they have been accustomed. These are the people who will be ready to buy in the retail stores of the country if only their desire for the merchandise is stimulated.

Classify Your Prospects

This leads up to the important question, Is not the average retail store today keeping too near the bread line, so to speak? Obviously the people who are out of work and have been for some time are not a position to buy. It would be a waste of effort to try to sell them anything except the necessities which they have to have.

Is it not possible this winter for many stores that find their volume of sales reduced through the curtailing of the purchasing power of their customers to at least partially overcome this situation by efforts to attract a class of trade not so vitally affected by the current depression?

Dealers in all lines frequently remark regarding a line of goods, "This is above our class of trade." Doubtless the statement is true with reference to the particular goods in question. But how many of these dealers have given sufficient thought to catering to the class of trade able to purchase most of the things it desires. This is the class least affected during the periods of depression. The store that reaches this kind of trade this winter is fortunate.

Two Ways Out

The dealer seeing his trade affected by wage reductions of customers or by lack of employment can do two things. He can endeavor to meet the needs of this class of customers by offering lower priced merchandise—by saving on store service he can afford to lower prices. The other alternative is to reach out into other fields for trade—into the fields where people do have money.

There are several ways in which the latter might be done. One is the selection of merchandise. Stores in every field have, during the past years, developed profitable side lines. In the drug field it has been such merchandise as kodaks, pocket knives, razors, vacuum bottles, fountain pens, books, and a hundred other things that are now sold in the modern drug store in addition to the regular pharmaceutical lines.

Stores in the hardware field have added lines of baseball, golf, tennis, guns and ammunition, fishing tackle, and other sporting goods. They have lines of silverware and cut glass to appeal to the discriminating woman. Excellent stocks of automobile accessories will be found in many hardware stores. These stores handle nails, wires and stoves, to be sure, but what were once called the side lines are now among the most profitable in the store.

Clothing stores, shoe stores, and department stores have added lines in the effort to meet the needs of a wider range of buyers. In practically every field an attempt can be made to get away from the bread line through selection of stock that will draw new customers who have money.

Properly Worded Advertisements

In advertising it is possible to aim above the average of the class of trade, rather than below. An advertisement can be written that will appeal only to the cheaper class of trade. Another advertisement will arouse interest only among the most expensive trade. There is a middle ground in which it can draw from both classes.

It depends on the tone of the advertisement and on the way the price is featured. For instance, we might say, "Sensational value \$4.98," or the advertisement might read "—from \$4 to \$10," or we might add, "An excellent selection at \$5."

The first has an obvious tone of cheapness and might appeal to the man looking for something for nothing. The second is rather cold and formal and the emphasis is likely to be on the higher price, which happens to be out of the reach of many people. When we add the line, "An excellent selection at \$5," we have mentioned a price that thousands of men think about right to pay for the particular article. At the same time we avoid the suggestion of cheapness. If the reputation of the store is favorably known, this line is likely to appeal both to the man who can pay what he wants for the article

and the man who has to consider expense but wants the best for the money.

Establish Reputation

A reputation for store service is an important asset in drawing a better class of trade. People who do not have to count the cost of merchandise they buy will be drawn to a store that renders unusual service. While it is possible to overdo the matter of service to the extent that it adds a burden to the cost of the goods, it is frequently the case that good customers are lost through failure to provide service which would be comparatively inexpensive.

It costs little more to maintain a clean, well arranged, well lighted, orderly store than it does a junk shop. While the latter might make no difference with the trade near the bread line, a well kept store does have an influence upon the people who are able to buy what they want and go to the store where they like to trade.

An analysis of your customers will divide them into several groups, some of whom have money and others have not. The men on salaries and fixed incomes as a rule are now better off than those who work for wages from day to day. This is the reverse of conditions two or three years ago when wages were increased in many quarters to a greater extent than salaries.

Secure Home Owners

People who own their own homes will now be in a better position to buy than the people who rent, as rents have not been reduced to any large extent. If the houses were acquired previous to the rise in building costs these people are in a still more fortunate position.

Automobile owners as a class have means and are good spenders, not only for gasoline and automobile accessories, but for all other lines of merchandise as well. The people who travel have money to spend. Not every dealer is in a position to get this trade, but for those stores that can it forms a clientele of good buyers.

The farmers have been seriously affected by the lower prices of farm products. This has been met to some extent by the lower costs of farm labor. With the good crops of this season, many farmers will have money to start buying again.

Certain Classes Will Buy

These are a few general classes of customers who may be in a position to

buy while other groups are not. In every community there will be found other distinct groups from whom business may be profitably solicited this winter. When you send out your circular letters and direct mail, compile your lists from among these classes. These are the people who will buy. The others would like to purchase many things but their resources will not permit any but the most urgent expenses.

In many cities the employment situation this winter will be serious. It will have a depressing effect on the business of those stores whose trade comes from the classes out of work, or who have not sufficient means to buy the things they have been accustomed to buy. Nothing that a retailer can do will lessen to a large extent the unemployment in his community or replenish the incomes that are depleted.

To meet the situation some dealers are rearranging their stores and reorganizing their forces to get the trade that is farther away from the bread line. By planning ahead and aggressive merchandising they will accomplish this result.

They Want a Slogan

The National Council of Lighting Fixture Manufacturers has decided to have a slogan which will be in keeping with the size and influence of so great an organization, and which will express in a short and effective manner the aims and ideals for which it stands. But what is particularly interesting is that the National Council is offering \$100 for the best slogan, \$50 for the second best, and several \$10 prizes.

All are invited to enter the contest, whether they are members of the National Council of Lighting Fixture Manufacturers, or the Dealers' Society, or not. It is a question of getting the best slogan. Nothing else counts.

Results will be announced at the big Fixture Market in Milwaukee, to be held January 30 to February 4.

Electric Lights for Police

Electric lights as assistants to traffic policemen was discussed at an open meeting of the Illuminating Society on December 15 at the Engineering Societies Building, New York City.

John A. Harriss, special deputy police commissioner in charge of traffic of New York City, spoke on "Signal Control of Traffic" and told of the development of the traffic tower idea as used on Fifth Avenue in New York City.



• CONTRACTING •

A Department Devoted to the Study and Discussion of the Practical Problems of Electrical Contracting

ALLAN COGGESHALL

Associate Editors

HENRY F. RICHARDSON



Push Button and Annunciator Systems —Continued

In charting out a thorough push button and annunciator system the problem is much the same as that encountered by the telephone companies in laying out a new district or even a new building. In fact, in laying out any electrical distributing system the basic problem is not electrical at all. It is more nearly akin to the laying out of a system of streets or aisles and endeavoring to forecast the probable traffic in various directions, and the probability of future changes and rearrangements of the routes of traffic.

Of course, after the traffic and density studies have been made, the results must be accomplished electrically and there is abundant opportunity here for skill and ingenuity in translating occupancy needs of an office or building into electrical circuits and apparatus.

If such a system is to be at all extensive such as required in a bank, for example: The system in its entirety may easily cost more than the lighting work. In any case in such a building, its cost is not insignificant, and from the standpoint of cost as well as from its inherent interest, it is well deserving of careful study.

Speaking first of the distribution system rather than the apparatus the important considerations may be roughly indicated as follows: The matter of securing proper raceways for all wires both present and future is of primary importance. By raceways is not meant necessarily conduits. These raceways, for low voltage wires i. e. 6 to 24 volts, may be of various sorts, for example, picture mouldings, base boards, banking screen chases, and other chases or openings. Raceways also may be made up of a combination of different kinds of pathways. Supplemented by the usual form of conduits.

Of course, basically, the location, capacity and points of origin and destina-

tion of the various raceways depend on the density and traffic studies. Often, however, there are a number of equally acceptable ways of accomplishing a proper system of raceways, that is equally acceptable to those in charge of the planning operations. One of these ways may be far more economical of material and labor than the others and much more to the contractor's advantage. Therefore it behooves the contractor to be on his toes, and to know the possibilities of various systems and their applicability to different conditions. Such knowledge will often reap a big reward in profits on a job already contracted for or in the negotiation stages.

Any annunciator and push button system extensive enough to merit the type of study indicated above will usually resolve itself down to a system of trunk cables, branch cables, and local wiring connections together with an adequate number of interconnecting boxes or junction points.

The principal interconnecting boxes are located at the centers of the chief

zones of calling or receiving stations and sometimes if the system is a large one a main distributing box or frame is provided, where all the trunk cables and battery supply feeders originate. Fanning out radically from each of these principal interconnecting boxes, there may be a system of sub junction cables each terminating in a sub junction box located in the center of a minor or local zone of calling or receiving station.

These sub junction boxes then become the points of termination for the various local wires running to the calling or receiving stations themselves.

Such a system, if well laid out, will insure that there will always be a sub junction box in fairly close proximity to any possible calling or receiving station. If the traffic study has been a thorough one, the capacity in wires, provided to each of these sub junction points will prove to be adequate and not excessive. Of course, it may easily happen that some of the sub junctions are never used or that others are over crowded, but within the realm of human ability to forecast future requirements a well planned system such as outlined above will fulfill all that is demanded of it.

It frequently happens that when a system such as outlined is required for the proper operation of a building, that an entirely similar system is needed for other purposes also, such as telephones. In this case it is usual to provide telephone and miscellaneous sections in each main and sub junction box and to carry the two systems along in parallel conduits or raceways.

Or, it may happen that no annunciator and push button system is required, but that an extensive system of telephone wiring is necessary. In this case the same sort of wiring scheme as that described above will fulfill the telephone needs very thoroughly.

The flexibility and adaptability of such a system to any normal or even



Showing Baseboard and Picture Moulding Boxes and Radiating Conduits Ready to Receive Floor Elbows

fairly excessive demands should, it would seem, be fairly evident. The system provides a number of electrically separate wiring circuits the terminations of which occupy adjacent terminals or binding posts in a common junction box, at which point any circuit so terminating may be cross connected by tie wires to any other circuit within the box, and so a circuit may be handed along from box to box until it is finally brought to the destination desired.

In each of the interconnecting boxes, by proper arrangements, provision may be made so that after the cables are terminated space is left for running the cross connection wires through bridge rings, thus giving a neat and orderly appearance to the box no matter whether a number of wiring changes have been made or not. Each terminal in each strip should be numbered so that a record of connections may be kept and any circuit easily traced through each interconnection box in which it appears.

With proper coöperation between the architect and builder there is usually little difficulty in obtaining suitable provisions for the main and sub junction raceways. An electric shaft is sometimes provided for the vertical runs and this shaft may be connected to the picture moulding on either side of a corridor by conduits and the sub junction boxes may be located on the outer walls and connected to the box in the main shaft box by conduits, or may be joined to the picture moulding only.

The problem that is more particularly the electrical contractor's is the running of connections from the sub junctions to the desks or other locations where the calling or receiving stations are situated. If the majority of these stations are close to the outer walls good use may often be made of a raceway behind a baseboard. The arrangement of the baseboard in this case calls for some skill in design in order that wiring connections may be readily taken out without disturbing other wires. The problem, however, is not over difficult and if the sub junctions are arranged with a lower section opening directly into the wiring space behind the baseboard a very workable scheme is secured.

If however, provision must be made for a number of connections away from the outer walls that is more or less pro-

miscuously located on the open floor space a very different sort of problem is presented.

When the floor space is cut up into offices or separate rooms with a corridor running past a number of such smaller spaces, a very good scheme is to make use of a deep picture moulding in the corridor with smaller picture mouldings running at right angles to the corridor and located on the walls of the separate rooms. Then by means of conduit nipples through the walls or partitions and occasional vertical conduits connecting the picture moulding with the baseboard an adequate system is provided. This system is only applicable when the corridor and office partitions are reasonably permanent.

If however, a large open space of floor area is to be provided with complete wiring facilities to any possible location within such area none of the above schemes will apply. Such spaces are becoming more frequent in new buildings where large clerical or banking departments are housed in one big office and the problem is a very real one. If concrete floors are employed on top of fire proof floor arches the entire floor construction is a ponderous affair not readily lending itself to varying requirements in the matter of electrical connections.

A usual way of meeting this situation is to run a system of radial conduits from each sub junction box in the manner of a spider's web, the conduits being of different lengths and each terminating in a floor box or floor ell or

tee. An attempt is made in this way to locate a floor box, ell or tee in every spot in the floor area where an electrical connection is at all likely to be required.

This arrangement is very expensive and of course in order to have anything like enough facilities a great many outlets must be provided which are never used. The percent of useful outlets compared with the entire number is probably very small. Also it frequently happens that there is no outlet available at the point to be reached, and cutting a floor chase is necessary.

(To Be Continued)

CODE CHATS

By HUBERT S. WYNKOOP, M.E.

Monthly Discussion of National Electrical Code Practices by Well Known Authority in Charge of Electrical Inspection, City of New York

250 Watt Sockets

From all quarters of our territory come complaints against the 250-watt socket, which seems to be altogether too flimsy to withstand the modern hard usage to which it is subjected through the extending employment of multiple taps or 500-watt appliances. This socket is designed to carry only about $3\frac{1}{2}$ amperes as a steady load; and it cannot be depended on to break much more than $2\frac{1}{2}$ amperes with repeated success.

We have been fretting under this condition for some years; but since other sections of the country seem not to be troubled this way—at least the inspection departments so report—it has not yet been possible to remove the 250-watt rating from the Code.

Latches for Doors of Cabinet Boxes

The Code no longer specifies that the door *must* have a latch and *may* have a lock in addition thereto. This requirement was transferred some years ago to Underwriters' Laboratories standards. Usually this works out satisfactorily; but occasionally a local metal worker will make up a lot of boxes, using a labeled box as a model, but will forget to provide the latch. These boxes find their way into the hands of contractors, a few of whom balk when told to provide the latch, on the ground that a lock is present and that anyway the Code doesn't call for either lock or latch.

It is well to remember that Code requirements *plus* accepted standards



Showing Main Interconnecting Frame Practically Completed. Note Fused Bating Strips and Provision for Cross Ties

furnish the basis on which installations must be judged.

Standardization of Receptacles

It seems a pity that when we are shutting down on baseboard receptacles of the open type—because of the accidents which they have caused—architects seem to be demanding more and more that baseboard receptacles of the hinged door type be permitted. These are only slightly better from an inspection standpoint than the old screw shell receptacle; and besides they are non-standard.

The parallel blade, dead front receptacle is really the standard; but the architects, who as a class are prone to resent any restriction placed on them by other than their own profession, consider the standard receptacle to be inartistic. So they penalize every other person who tries to conform to the standard by requiring him to undergo the annoyance of substituting a special plug for the standard one with which his lamp or fan or other appliance is equipped in order that he may attach the appliance to the house equipment designed by the architect.

The manufacturers cannot relieve this situation much. They must make what the public will buy; but the electrician can do powerful missionary work if he will remember to speak the proper word each time he comes in contact with an architect who specifies the non-standard receptacle, whether in baseboards or elsewhere.

Here, again, there seems a chance to dispense with an unnecessary item—which means one less item of manufacture, of catalogue listing, of stocking. For the non-standard receptacle is as useless today as the 250-watt socket.

Flexible Tubing

Since we do not permit either concealed knob-and-tube work or "fished" work, and flatly refuse to recognize flexible tubing as a raceway for wires, this product (popularly known as "circular loom," which was the trade name under which the first manufacturers distributed it) has no field of usefulness left, except as an additional covering for wires which are run exposed on cleats or knobs.

We have constantly to combat efforts to use loom as an extension of an all-metal system. Two kinds of installation therefore demand much of our attention: first, meter loops of the sub-

metering companies, who are generally reluctant to incur the expense of a proper meter pan, and, second, leads from side-walls to motors.

Where a metallic inclosure—conduit, armored cable, or raceway—is run, it ought not to be broken into by a section of open loomed wires at meters, or extended by open loomed wires at motors. Such jobs are comparable with the case where the conduit ran short and the wireman brought loomed wires out of next to the last outlet box and continued to the end of the circuit (to the last outlet box) with this class of exposed wiring.

Exposed Wiring and Cutouts

Our Code does not absolutely prohibit open wiring or uninclosed cutouts. True; but we have always to consider the location and the character of the occupancy in determining whether or not the open wiring will be subject to mechanical injury, and whether or not the blowing of a fuse would be apt to set fire to inflammable material, and whether or not the exposed terminals of cutout blocks were so located as to render likely accidental contact therewith.

With all these variables to consider, it is not surprising that honest differences of opinion often develop between wireman and inspector. I presume that this is one of the difficulties which will remain with us as long as we permit open wiring, which we have no present intention of prohibiting.

Industrial Waste

A committee of the American Engineering Council reports that 50 percent of industrial waste is due to management and 25 percent to labor. I wonder how much electrical waste is due to the many and divergent codes under which manufacturers must design and contractors install.

Burglar Alarms

The burglar alarm companies seem to be doing a thriving business just now; and we are kept busy in preventing the use of a lamp resistance as a substitute for a transformer when current is taken from a lighting circuit. These companies also have a habit of obtaining their grounds by connecting to conduit or cable armor; and we do not sanction this practice. The network of fine bare wires which is strung most thoroughly and systematically throughout the premises has to be

watched, too; for we cannot allow these wires to come within two inches of any exposed lighting wire.

Grounding Switches in Vaults

We have been trying out the plan of requiring a transformer vault layout such that when the primary switches are thrown open the transformers and other high tension apparatus will be connected to ground, the thought being that this is advisable in view of the possibility of one of the primary switches sticking and failing to open.

Some of the companies have objected to this procedure because it is likely under certain conditions to create disturbances in the transmission line. The disconnecting switch—of some indicating type—is now being accepted in lieu of the grounding switch.

Secondary Service Switch

We have never accepted the oil switch installed in a vault as a service switch, within the meaning of the Code. Considerable reluctance has been shown to the requirement of an extra switch on the secondary side outside the vault; but we have always contended that the primary switch in a locked vault was not "accessible."

As the outcome of this controversy there has been developed a plan by which the handle of the oil switch and the overload release have been transferred from the panel in the vault to a panel inserted in the wall of the vault. A system of rods and bell-crank levers connects the handle with the switch—and this is accepted as complying with the Code, because the handle is now accessible.

Outlet Plates for K and T Work

When I observe how poorly the work at outlets of so-called concealed knob-and-tube work is performed, or how much pains the wireman has taken to make a really good job, I wonder whether in the long run the use of outlet plates and clamping thimbles (for loom) would not prove economical. We do not permit this method of wiring here; so I can only raise the issue without attempting to answer it.

I wish some qualified ("qualified, one familiar with the construction of the apparatus and the hazards employed"—U. S. Bureau of Standards) person would write a brief in favor of knob-and-tube work. We gave it up here because we found it so frequently dis-

turbed by other workmen before current was turned on.

Some contractors argue that it is cheaper than the other methods of wiring. Other contractors claim that armored cable is just as cheap, as the money spent for material is saved in the labor of boring beams and setting tubes and knobs. I suspect that if outlet plates were required with knob-and-tube work, this method of wiring would cease to have any advantage over armored cable in the matter of cost.

Revising the National Electrical Code

Contractors Discuss Various Points for Benefit of Committee

[NOTE.—The electrical committee on Code Revision, meeting in New York City on December 5 and 6, decided to postpone the issuance of the next edition of the National Electrical Code from 1922 to 1923, thus permitting an opportunity for wider discussion by those interested. As it has been shown that the electrical contractor is more vitally affected by Code requirements than any other branch of the industry it is urged by the Code Committee that contractors be given space in these columns to fully express their opinions and to make suggestions for Code revision. Among others, the following interesting letters were received in response to a Bulletin issued on the subject of Code Revision by National Headquarters. Further suggestions are solicited.—The Editor].

We believe it is absolutely essential that open cleat work and wood molding be discontinued, due to the ease in which hazardous extensions can be made by those who know little or nothing of the proper methods of installation and thereby bring disrepute upon the industry.

We believe that conduit (flexible and rigid) should be required in all buildings open to the public and all houses or apartments housing more than four families and in all cellars.

Unless the above is taken care of by the Code Committee, it will make it imperative for cities to pass their own local ordinances thereby weakening the Code by setting up city inspectors and causing much confusion.

We believe the laxity and weakness shown by the Code Committee has been a big item in cities making their own laws for safety. The Code Committee should not be held back by public utilities' wishes for cheap jobs without bringing the industry into disrepute.

Very truly yours,

JOHNSON WAHLE ELECTRIC CO.

Richard Wahle,
General Manager.

Received your bulletin, No. 48, asking for suggestions for revision of the National Electrical Code.

We have had considerable experience in going from city to city wiring residences. Our experience has been that each and every city has a different method of enforcing the National Code regarding grounding.

We would suggest that the Code be amended so that there would be a method used something similar to what is used in Cleveland or some other city.

On the ground wire, it is not necessary to run an extra wire from the outside of the building which will be connected on to the neutral side and then run to a water pipe in the basement.

The method used in Cleveland is, we ground the conduit together with the neutral side with one ground wire and then run it to a water pipe.

We have wired homes in cities where it was necessary to run an extra one half inch pipe on the outside of the building in which was installed a No. 6 ground wire which was connected to the neutral and which we had to run separately to a ground to water pipe. Then it was necessary for us to install another ground from the conduit to a water pipe. This meant two ground wires on one job and it was an interpretation of the National Code; in fact it was a letter sent out from the office in Chicago to the inspector in Tiffin, Ohio.

The writer has not looked up the National Code to give you this information as we here operate under the city Code, but these are some incidents which the writer happens to know that our men have been experiencing difficulty with.

The suggestion that the writer is trying to convey is that the Code be written in such a way that there will not be different interpretations in different cities.

Another suggestion the writer would make, would be to have residence or all wiring so that the shell side of the socket is grounded, or in other words the shell side of the socket connected to the neutral.

We have used this in Cleveland quite successfully, and I believe that if the National Code adopted it, it would save a good many accidents.

The writer is giving you this in sort of a hurried way and if there is any more information you would like to have on it would appreciate it if you would please get in touch with the writer.

HARRINGTON ELECTRIC CO.

G. P. Fuerst,
Sec'y and Treas.

Intelligent Use of Guarantee

Misinterpretation of the manufacturer's guarantee on electrical products is responsible for a large proportion of come-backs in the form of servicing troubles, according to an article in a recent number of "Royal Breezes," a publication issued by The P. A. Geier Company of Cleveland, which points out that it is a mistake for the salesman to make sweeping statements about the warranty.

Intent wholly upon getting the order, the salesman, when he is asked about the guarantee, after replies, "Why madame, if this appliance ever gets out of order, all you have to do is to call us up on the telephone, and we will have a man right out to fix it. We guarantee it absolutely."

The customer accepts this at its face value, and then when the small son of the house sticks a carving knife into the motor to see what makes it go, or when a careless servant lets the cleaner fall downstairs, the dealer is expected to make good all damage without quibble or question.

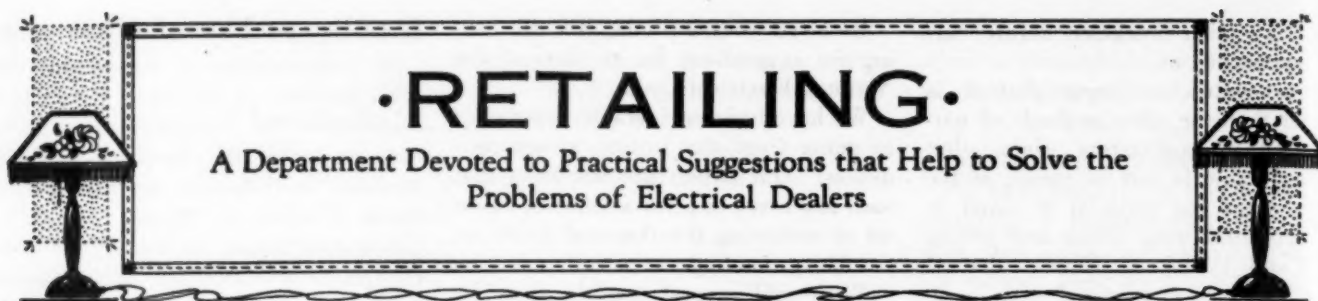
Careful reading of the guarantee would show that the manufacturer promises to be responsible for any defects in material or workmanship—nothing more. No one except the purchaser is accountable for accidents, abuse, neglect, or damage due to tinkering with the appliance. This should be made perfectly clear at the time of the sale, if later misunderstanding is to be avoided. Intelligent use of the guarantee makes for good feeling and better business, but misinterpretations of it is a trouble breeder.

Gives Dirty Money a Bath

When the customers of the Grand Rapids National Bank refused to accept bills that were soiled or dirty this bank found itself with \$12,000 on hand that could not be disposed of. The problem was a serious one.

Of course the greenbacks could be exchanged at the nearest Federal sub treasury, but this would take time and the money was needed at once. So the idea of giving the bills a bath was suggested.

The bank communicated with the local representatives of the Western Electric Company who, with the help of a department store in the city, put the money through electric washing and ironing machines. When it went back to the bank within a few hour's time, it was declared as good as new.



Use Selling Sense in Selling Appliances

BY O. C. SMALL

A Member of The Society for Electrical Development's Publicity
Department Says Good Judgment is of Prime Importance

After taking four thousand photographs of snowflakes, a gentleman has discovered that no two have the same pattern. The reproductions of his photographs showed intricate and beautiful designs that would readily serve as satisfactory patterns for lace work. But the point is that they are all different. So it is with people, to be specific—with salesmen.

The principles of salesmanship are in general clearly defined and standardized, but the application of those principles depends upon an element that is not and cannot be standardized—the human element.

Because of the vagaries of this element, then, it is obvious that if a person is so constituted that the ability to sell has been left out of his makeup, he should not waste his time, his employers' time, and the public's patience in trying. He should devote his efforts to something for which he is fitted and at which he has a fair chance of achieving success.

That will eliminate those who have no selling sense.

With the slothful person—the man who is lazy mentally or physically—we are not interested, even though he may have other qualifications that would permit him to sell, because in these days of fighting, no employer will retain his services.

Selling Sense Defined

The way is now clear to explain the use of "selling sense," which we take to mean that intuitive something which makes a salesman know what is the right thing to do and say under any and all circumstances in his dealings with the public.

The first principle of using selling sense as we see it, is to *sell* less by inducing people to *buy* more. The first

contact with the public is where we start working out this theory. As a general rule people enter a store with the fixed intention of looking at something which will be purchased if it satisfies them as to quality, utility and price. The cue then is not to rush at them and force a sale. Rather, the idea is for the salesman to show by manner and speech that he wants to assist the visitor in buying the needed article.

We are dealing with salesman who have selling sense, so it is unnecessary for us to put actual words in their



mouths, because their speech will be qualified to suit the type of customer and the article under discussion.

Having made the right contact, this salesman will then see on what basis he can sell the required article. Smaller articles and the larger ones too, if possible, will be sold for cash. In the latter case, the salesman must sense whether the customer can only be sold on the installment plan, and if so he must skillfully bring out the points of interest of the company's plan.

He must save his company all possible expense by giving only such demonstrations as are necessary to completely educate the purchaser; by not promising a trial in the home (if it is part of the plan) unless it is absolutely necessary in order to make the

sale; by not adding to the expense of delivering an article by promising to send it at a time other than the usual delivery is made, and by watching just such other items which are so frequently responsible for a loss being made where a profit should be shown.

Real Work After the Sale

The sale has now been consummated, but the salesman with selling sense has only just begun his work.

He will record the name, address, and all particulars of the customer and the appliance bought. During his conversation he has discovered how far the customer is acquainted with the possibilities of running her home electrically; how many appliances she has and what the immediate prospects are for selling her other appliances.

By his demeanor he has impressed the customer with the idea that the store he has the honor of working in is the best one of its kind in that town. By the way he has demonstrated the article he has reduced the possibility of future complaints, due to lack of fundamental knowledge on the part of the customer. By his clever handling of the customer he has held down his employer's expenses, added to the latter's financial and good will bank accounts, got another disciple to preach the gospel of electric service, and increased his own satisfaction in having done something well.

But the job is not finished yet.

The salesman with maximum selling sense will take a personal interest in all customers to whom he sells anything. He will see that they are called on the telephone and solicitously asked if the washer, ironer, cleaner, or whatever was last purchased, is giving every satisfaction. He will not rush matters

but will see that such customers are kept informed by letter or other means of any electrical appliance in which he knows they will be interested.

Having satisfied them, he will obtain permission to use their names where expedient to help in making sales to

other prospects. He will know what movements are going on in town into which he can suggest the introduction of the electrical idea. He will have his eyes open all the time for the purpose of selling electrical goods to satisfied customers.

To sum up, the salesman who "Uses Selling Sense in Selling Appliances" will sell his goods, his employer's store and himself by inducing people to buy. It is all in the method of giving the service given. The only trick about it is to know how.

Western Dealers Push Electric Washers

BY W. B. STODDARD

Through Unique Methods of Tying In, the Displays Described in This Article Have Proved Unusually Effective—Sales Increased and Good Will Developed

One of the most effective washing machine campaigns was that of the Nebraska Power Co., Omaha, Neb. For one week it devoted all of its energies to the pushing of electric washing machines. The newspapers carried big stories of the plans, and diagonally across each window ran a long strip of paper on which was painted "Ask about our cash refund sale."

This refund was to take place as follows: When one hundred machines had been sold one dollar would be refunded to each of the one hundred purchasers; when two hundred had been sold, two dollars would be given back, and similarly when three hundred and four hundred of these washers had been sold. This plan kept all the owners of machines plugging as they realized that the more machines sold the greater would be their refund.

One of the windows contained a showing of washing machines, one being in constant operation, and cards stated the terms of the refund—which had also been announced in the newspapers—as well as the fact that the machines were sold for a cash payment of five dollars and the payment of a certain stipulated sum each week. This gave the customer the privilege of using the machine while it was being paid for.

Announcement of this refund sale was enclosed with each of the monthly bills, and everyone interested was urged to come to the store and receive an actual demonstration of the safety and rapidity of the work done by the machine.

Sales Increased

A number of the western merchants have largely increased their sales through the effective window displays arranged by them. For example, in a recent display of the Billings Hardware Co., Billings, Mont., against the ivory

walls was set a washing machine, in front of which was a large rug of pink and blue. From outlets in the ceiling depended long cords, ending in electric irons set on stands at either end of the room. Set on the floor were electric table conveniences and a card suggested: "Do your work with electricity."

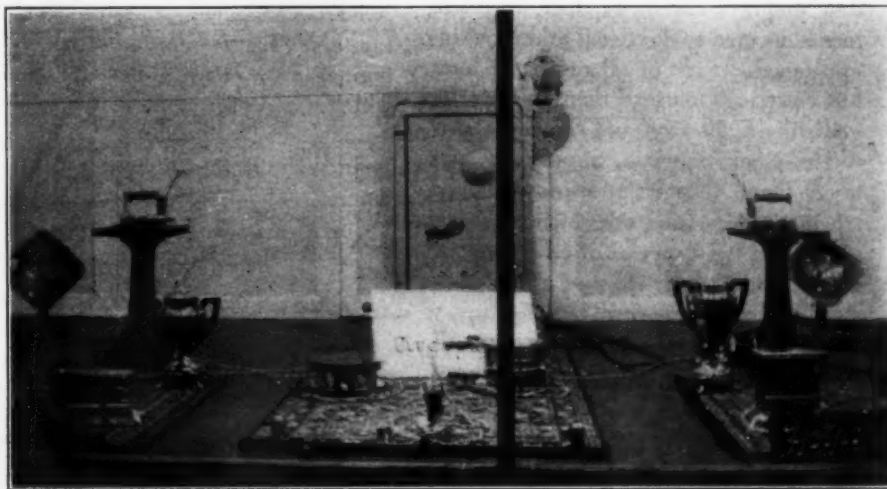
The Duval Co., Anaconda, Mont., showed a double picture. At one side was a woman bending over a wash tub set on a bench and at the other a woman reading while the electric washer did the work. Above the window was hung a sign "No more Blue Mondays for those who use an Electric Washer." A card between the two figures announced "This wonderful mechanical washer—women gets the clothes cleaner in half the time it takes to do them by hand—two cents an hour pays for the electric current." The window attracted so much attention that a photo was taken of it, a cut made, and this was used to head a folder which was mailed to a long list of rural patrons, stating the advantages of the electric washer.

Celebration Tie In

Speaking of timely events, the Federal Washer Co., St. Louis, Mo., linked up the recent centenary celebration in that city very effectively with their washers. In order to appeal to the crowds which swarmed into the city to witness the LaFayette pageant and other festivities coincident with the celebrations of Missouri's hundred years of statehood, this company had painted in red letters on one of its windows 1821 and in the window was shown a woman with head and hands in the stocks.

The next window had 1921 painted on it and here was a woman wearily bending over a wash tub placed on a bench. A long sign extending across both windows bore the caption "Instruments of Torture." The third window of the series showed a washer, and standing beside it a smiling woman in neat house dress. A card in this window suggested: "Why torture your wife? You can buy an electric washer for \$2.00 a week."

The Springdale Mercantile Co., Springdale, Wash., was another firm



Billings Hardware Company of Billings, Mont., Found This Simple Display Unusually Effective

that set about instructing the public in an effective manner as follows:

STILL WATERS RUN DEEP—according to the old saw but we are often inclined to think that they stand still. Some of these wise old saws are wrong. It is alright to be silent and deep but surely it is better to say something if you have something to say. How would you know that we had just what you want at our store, at the lowest price, unless we kept telling you about our washers—Electric Washers—at a price to suit your pocket-book. Come in and get a machine now, and get the use of it while you are paying for it.

One of the San Francisco dealers adopted an excellent method of convincing his customers that the operation of an electric washing machine is play rather than work. He learned that Mrs. Mary B. Thomas of his city possessed a machine and that she enjoyed using it so much that she was not satisfied to do her own washing, but did a number of others each week—not for money, but for the mere pleasure of doing it.

He was granted an interview with this remarkable woman during which she said, in substance: "I really enjoy using my electric washing machine, and when I hear of a poor family, whose mother is in poor health, I go there and offer to do the washing until such time as the mother is able to assume respon-

sibilities again. I collect and return the washing in my roadster, and I find that thus keeping the family in clean clothes aids materially in preserving their self respect, and it is often more appreciated than would be a gift of money."

He secured a picture of Mrs. Thomas standing by her machine, and used it in a little folder, together with a digest of her remarks, which he sent to a large list of prospective patrons. The little human interest story called wide attention to his washing machines, and many called to see the washer that made play of work—and what is more, when a practical demonstration of its merits was given on the spot, an order was generally left.

Human Interest in Featuring Electrical Table Cooking Appliances

BY ERNEST A. DENCH

Those Displays That Suggest Occurrences in Every Day Life Will Prove Most Valuable—This Article Describes Some

Anything that will simplify and speed up the first meal of the day is likely to receive the housewife's consideration. Breakfast is a difficult meal for her as she has one eye on the clock so that the man of the house can catch his train and the other eye on seeing that he does not have to wait between courses. The result is that she at least has a very unsatisfactory breakfast.

This knowledge of modern American life should be capitalized in your window displays and newspaper advertisements devoted to electrical table cooking appliances. First of all comes the humble electrical toaster; then follows the grill, the waffle iron and the percolator.

The Bank Electric Supply Co., Ottawa, Ont., devoted a display to electrical toasters, the sale of which was stimulated by a special offer. The card ran: "Free one two-way plug given away with each toaster."

The B. C. Electric Co., Vancouver, B. C., made extensive use of newspaper advertising. One of its typical announcements dealt with electric toasters in a clever manner as follows:

The Toastmaster of the Breakfast Table

A shiny, bright faced fellow that adds zest to every meal.

His "toasts" are deliciously crisp, and like good friendship, are always warm. The Electric Toaster makes delicious toast right at the breakfast table—each slice temptingly browned and served piping hot.

There is no need for the housewife to trot to the kitchen every few minutes—and the toast is always done just right.

The Brooklyn Edison Co., Brooklyn, N. Y., conducted a sale of electric toasters. Every one of its patrons was mailed a two-leaf folder, one half of which was perforated to serve as a reply postcard. This secured action. The main page of the folder bore this convincing announcement:

DELICIOUS TOAST—DONE ELECTRICALLY

Real toast, hot, crisp, nut-brown, served right at the breakfast table. Takes but a few seconds to make another lot. Current costs little.

On the other side was a single statement in display type: What is more delicious than hot, crisp toast fresh from a Brooklyn Edison Electric Toaster?

The postcard part of the folder was

duly filled out with the necessary message, plus an illustration of an electric toaster at the side.

Above the blank lines to be filled in by the applicant was the one line caption in big script: "Your wife can enjoy breakfast with the family—it toasts on the breakfast table."

The Asheville Power and Light Co., Asheville, N. C., made effective use of white space in a two column announcement that occupied six inches in a local daily. It ran: "What is more delightful for Breakfast than a cup of hot coffee, and a slice or two of crisp, brown toast?" At the left of the second line was a small cut of an electric percolator while a sketch of an electric toaster was inserted to the right of the third line.

The Burnham Frill Electric Co., Ltd., Edmonton, Alta., displayed an electric grill in the middle of its show window. The grill was backed up by an announcement of the following content:

\$500 CASH PRIZE FREE

A customer claims she can fry at the rate of fifty eggs an hour on the stove. One hour's current costs 4 and 8/10 cents. We will give five dollars in cash to the

first lady customer who can beat this record. Must have a witness. Information inside. A hot meal in a few minutes.

The Brooklyn Edison Co., Brooklyn, N. Y., conducted a sale for one month on electric grills. Several grills were exhibited in its showroom windows on glass shelves, supported at each end by an oak pedestal. Large cards scattered about the floor bore the following convincing message:

The heat control—A special feature of this grill, is the method of controlling the heat. A simple arrangement of plugs permits of four different degrees of heat.

For light housekeeping the electric grill is particularly useful. It makes perfect toast, broils chops or steak, prepares eggs in any style and cooks cereals. Two operations may be performed at the same time.

Small signs were placed in between the grills on the glass shelves. One of the electric grills down in front was taken apart, showing the different parts of the appliance.

The Tampa Electric Co., Tampa, Fla., inserted a convincing newspaper announcement devoted to the electric grill. The facts advanced could be used as window card material. Here is the copy in question:

The Electric Grill—

When you are not hungry for a big meal, but your appetite calls for a bite to eat, the handy little electric grill is instantly ready to cook for you. Simply attach to any socket. You can broil, fry, stew, toast—all in a few minutes' time.

Bancrofts, Bangor, Me., grouped a number of electric grills and toasters in a window display. At the center was the picture of a man seated while frying cakes on a small electric grid-dle. The caption beneath the picture was: "My wife's gone to her relatives—I should worry."

The New York Edison Co., New York City, stationed a dining room table in the middle of its show window. The table was temptingly set for breakfast with an electric percolator, waffle iron, toaster and grill. A card served to impart this message:

Table Cookery with percolator grill, waffle iron and toaster. Breakfast and Luncheon can be prepared at a moment's notice.

The Manhattan Electric Supply Co., New York City, exhibited a period dining table spread with a linen table cloth over which silverware and china-ware was neatly placed. Room was found at the center of the table for an electric grill and waffle iron, with a table lamp casting a warm glow over the setting.

Two chairs were drawn up to the table. An Oriental rug covered the window floor, with grills and waffle irons arranged here and there. This was an excellent attempt to show the cooking appliances in use in their natural surroundings.

E. R. Wendenroth, Brooklyn, N. Y., supplied the dining room atmosphere to a greater degree. There was a table attractively set for breakfast, a home-like touch being provided by a vase of real flowers on the table. But the appliances instead of being merely placed on the table were exhibited with samples of the cooking done. The electric toaster for instance contained a delicately browned piece of toast while there was a fried egg and a piece of bacon in the grill. Electric toasters and grills were exhibited on the floor on individual blue mats.

The Lectorlier Store, Brooklyn, N. Y., displayed electric cooking appliances individually on pedestals, draped around the base alternately with rose plush and cretonne.

The Newark Electric Appliance Co., Newark, N. J., covered the window floor at the rear with electric blue crepe paper. This served to bring out the nickle in the electric toasters and grills, arranged at equal distances apart on the floor. Appropriate signs were displayed.

The Salesman's Job

The completion of one sale is not the end of your work as a salesman or clerk. With tact, you can suggest other articles which will be bought by the same buyer also.

Opportunity

The man who can make the most of the moment has no need to fear the outcome of days and weeks. Frequently the earnings of many weeks depend upon accepting the opportunity of a moment—an opportunity which presents itself in one instant and is gone in the next.

Russia's Electrical Men

According to figures sent out by the American Relief Administration nearly one half of Russia's skilled workmen are electrical workers. The report shows that out of a population of approximately 130,707,600 there are 4,675,400 skilled workers—men who are expert in mechanical and other branches of the various trades.



Reproduction of Window Display Developed by the Dealer's Help Department of the Benjamin Electric Manufacturing Company of Chicago

How to Develop an Industrial Specialty Business

Electragists Are in Position to Employ the High Pressure Selling Methods Necessary to Start Slow Moving Goods

Business in household electrical appliances has been definitely reduced—or should we say lifted?—to the plane of specialty selling. Carefully organized, thoroughly schooled squads of one idea specialty salesmen operating at high tension spurred by big commissions and driven by relentless crew managers, comb and canvass every community in search of washing machine and cleaner sales.

People are sold who had no thought of buying, who had no money to buy. Although only one wired home in three as yet possesses a vacuum cleaner it is safe to say that every wired home has been solicited and that the aggressive, don't-take-no-for-an-answer type of salesmanship will finally carry the sales of these appliances to the point of absolute saturation.

Whether we personally agree with the high pressure system of selling or not, the fact remains that it is effective. It is effective because it is creative. Sales are actually *made*; they are not the result of voluntary demand. The public is sold both their need for the appliances and the appliances themselves to fill that artificially created need. It is like the patent medicine business of which Elbert Hubbard said "You not only sell the remedy but you sell the disease which the remedy is supposed to cure."

Valuable in all Lines

Viewing the success and profit of specialty methods as applied to household appliances it occurs to us to ask why the same methods may not be applied to certain industrial items—for example, electric glue pots. Here is an item of almost universal use in the industrial world. We can name off-hand thirty lines of manufacturing and assembling in which an automatic glue pot can be sold to replace present gas heated or other unreliable units.

And there is a good story for the specialty salesmen with such an item—a story about how to attain the best results, and the danger of overcooking glue when it is prepared in a pot of uncertain temperature. If, as Hubbard says, the essence of specialty salesmanship lies in selling the prospect the disease as well as the remedy, then a clever man with a few scientific facts about glue and viscosity and adhesion and

such things would have no very difficult trick to sell a manufacturer the need of a pot which would maintain his glue at the correct scientific temperature.

Flat irons and ironing machines are another specialty item which ought to go big in among industrial customers. Until you make a canvass of the subject you will not realize the number of smoothing irons of various sorts, sizes and types utilized in many hundreds of workshops. The great majority of such implements at present are of ancient types or unsuitable sizes, or are installed improperly.

Results in Saving

Time and labor is wasted in the use of such poor equipment, materials are damaged or spoiled, deliveries are delayed, and frequently the operating costs are abnormal. Can you not imagine a flat iron specialty salesman going out after such business and bringing in not only signed orders for flat irons, but a mass of repair work and considerable numbers of small wiring and accessory jobs? We can.

Then there are a great many electrical appliances of such specialized nature that the electrical man scarcely ever hears of them—vulcanizers for making rubber stamps, pants pressers for clothing shops, heaters of a dozen sorts used in candy making, printing, storage battery repair work, millinery, advertising novelty manufacture and what not. In all of these industries electric equipment can be sold. It is our contention

that it can be sold in a really worthwhile big way by the employment of specialty sales methods, by canvassing and high pressure aggressiveness.

Electragists Can Cash In

The development of such business is particularly within the province of the electragist because in most cases the sale involves an installation job. While many of the smaller industrial appliances are nominally lamp socket devices, their regular economic and efficient operation is insured only by proper installation. Stout connections, the elimination of dangling cords and loose wires, the use of indicating switches, and safety switches in place of the old open knife switches so frequently found—these are essentials which the salesman can learn to sell as side lines when he has mastered the technique of selling industrial specialties.

As the business now goes, most of these items are sold by non-electrical organizations. The butcher supply man sells meat grinders and coffee mills; the tailor's finding man sells pressing irons; rubber stamp vulcanizers are sold once in a blue moon by the man who supplies the stamp with his raw materials, and the various other items take their hesitating course via some sort of supply or equipment organization wholly disassociated from the electrical industry.

The demand for such items is not great, naturally, but the demand for vacuum cleaners and washers and ironers is not great, either.



The Grayland Electric Company, of Chicago, Found that Much More Interest Could be Developed by Arranging Various Parts of its Store to Represent Home, Office, Etc.



ORGANIZATION ACTIVITIES

A Department Devoted to the Reports of State and Local Meetings



STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary	State	Chairman	Secretary
ONTARIO, CANADA:	K. A. McIntyre, 24 Adelaide St., W. Toronto	J. A. McKay, 24 Adelaide St., W. Toronto	MARYLAND:	S. C. Blumenthal, 505 N. Eutaw St., Baltimore	C. Philip Pitt, 15 E. Fayette St., Baltimore
BRITISH COLUMBIA:	W. W. Fraser, 744 Hastings St. W., Vancouver	J. C. Reston, 411 Howe St., Vancouver	MASSACHUSETTS:	Geo. B. Quinby, Boston	J. E. Wilson, 263 Summer St., Boston
COLORADO:	J. Fischer, 213 15th St., Denver	W. A. J. Gascott, 715 18th St., Denver	MICHIGAN:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
CONNECTICUT:	E. S. Francis, 272 Asylum St., Hartford	Geo. M. Chapman, 43 E. Main St., Waterbury	MINNESOTA:	Emil Anderson, 240 Plymouth Bldg., Minneapolis	Arthur P. Peterson, 2395 University Av., St. Paul
DISTRICT OF COL.	Frank T. Shull, Conduit Rd. and Elliott St. Washington	H. R. Harper, 635 D St., N. W., Washington	MISSOURI:	W. J. Squire, Kansas City	A. J. Burns, 533 Delaware St., Kansas City
FLORIDA:	T. E. Satchwell, Jacksonville	J. C. Spencer, Palatka	NEW JERSEY:	Geo. E. Davis, 23 Central Ave., Newark	Elmer D. Wilson, Newark
GEORGIA:	Henry Morton, 1227 Broad St., Columbus	C. B. Anderson, Walker El. & Plain. Co., Columbus	NEW YORK:	F. A. Mott, 29 St. Paul St., Rochester	J. P. Ryan, 26 Cortlandt St., New York City
INDIANA:	A. B. Harris, Gary	A. I. Clifford, 507 Odd Fellows Building, Indianapolis	OHIO:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefer, 939 E. McMillan St., Cincinnati
IOWA:	Louis L. Corry, 510 Brady St., Davenport	Arthur Tucker, 619 Jackson St., Topeka	PENNSYLVANIA:	R. W. Keck, Allentown	M. C. Sellers, 1518 Sansom St., Philadelphia
KANSAS:	C. S. Smallwood, 1017 N. 5th St., Kansas City	R. S. Stearnes, 336 Camp St., New Orleans	TENNESSEE:	P. W. Curtis, Chattanooga	J. A. Fowler, 10 S. Second St., Memphis
LOUISIANA:	C. S. Barnes, 513 Gravier St., New Orleans		WISCONSIN:	B. L. Burdick, 72 Water St., Milwaukee	H. M. Northrup, 25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

State and City	Local Secretary	Street Address	Time of Meet.	Place of Meet.	State and City	Local Secretary	Street Address	Time of Meet.	Place of Meet.
ALABAMA					NEW JERSEY				
Birmingham			Mon. Noon	Hillman Hotel	Atlantic City	F. P. Wright	16 Ohio Ave.	1st Thursday	Malatesta Hotel
Mobile	E. J. Hueguenot		Fri. 5:30 p. m.	Members' Offices	Jersey City	Wm. Doellner	743 Bergen Ave.	1st Monday	P. S. Bldg.
CALIFORNIA					Newark	Geo. E. Davis	23 Central Ave.	Last Friday	23 Central Ave.
Berkley	J. M. Gregory	Pacific Bldg.	Fri. 8 p. m.	Pacific Bldg.	Paterson	H. M. Desaix	88 Ellison St.		P. S. Bldg.
Covina	F. Rambo	308 E. 4th St.	1st & 3rd Mon.	Ontario					
Long Beach	O. W. Newcomb	118 E. 3d St.	Tues. Ev'g.	Spaulding's	Albany	E. A. Jones	31 Hudson Ave.	1st Thursday	Pekin Rest'mt
Los Angeles	Irvin C. Bruns	Pacific Bldg.	Tues. 8 p. m.	Pacific Bldg.	Binghamton	A. H. Hyle	12 Nevins St.	1st Mon.	Cham. Com.
Oakland	J. Gregory	165 Jessie St.	Wed. 1:30 p. m.	165 Jessie St.	Buffalo	H. W. Walcott	555 Wash. St.	3d Tues.	507 Elec. Bldg.
San Francisco	A. Elpins	Los Angeles Assn	Tues. 6:30 p. m.	Pia Ton Cafe	Cooperstown	B. B. St. John	Oncoata	3d Mon.	Vanon
Van Nuys					Endicott	A. H. Hyle	Binghamton	3d Mon.	Cham. Com.
COLORADO					Jamestown	Henry Lund	309 Main St.		Mfgs. Ass'n.
Denver	L. B. Roberts	227 Coronado Bldg.	2d & 4th Tues.	227 Coronado Bldg.	Kingston	M. C. Rivenberg	Huntington		
CONNECTICUT					Nassau-Suffolk	J. A. Palmer	Tottenville		
Hartford	H. D. Hitchcock	45 Preston St.	Call of Sec'y	118 Asylum St.	New Brighton	E. L. Taylor	26 Cortlandt St.	1st Thurs.	Penn's Hotel
New Britain	F. Mulvehill	Conn. Lt. & P. Co.	Monthly	192 Grand St.	N. Y. Sec. No. 1	J. P. Ryan	22 New Chambers	2nd & 4th Wed.	226 W. 58th St.
Waterbury	A. S. Jordan				Independent	John Perass			
DIST. COL.					Sec. No. 3	L. F. Lwedecke			
Washington			2d Thurs. ea mo., 8 p. m.	Dewey Hotel	Ozconsa	B. B. St. John	State St.	3d Thursday	Builders' Exch.
FLORIDA					Rochester	Theo. Benz	McClellan St.	Mon. 6:15	
Jacksonville	W. L. Joseph	155 E. Forsyth	1st Tuesday	208 Realty Bldg.	Schenectady	Mr. Spengler	P. O. Box 809	Subject to call	
Miami	C. E. Pullen	Pullen-Zoli Co.			Syracuse	H. N. Smith	First St.	1st & 3d Monday	Gas Office
ILLINOIS					Troy	Mr. Hall	Gray Elec. Co.	1st Tues.	Elks' Club
E. Moline	E. J. Burns	Rock Island			Utica	I. W. Austin	White Plains	Monthly	
Chicago	J. W. Collins	179 W. Washington St.	2nd & 4th Wednesday		Westchester	L. B. Smith	Roth Block	3d Fridays	Utilities Bldg.
E. St. Louis	O. J. Birmette	Ed. Blaine	Sat. 2 P.M.	Arcade Bldg.	Watertown	Geo. La Salle	Westbury	Monthly	
La Salle	E. J. Burns	219 18th St.	1st & 2nd Tues.	Post Hall	Woodmere	Mr. Mayer	Manor House Sq		
Rock Island	E. J. Burns	613 Tyler St.	1st & 3rd Mon.	219 18th St.	Yonkers				
Streator	Wm. Schroder				OHIO				
INDIANA					Akron	L. C. Wall	12 S. High St.	Tues. 3 P. M.	Elec. Co.
Evansville	C. E. Jett	570 Washington	Wed. noon	Y. M. C. A.	Cincinnati	W. R. Keefer	939 E. McMillan	1st & 3d Thurs.	Cham. of Com.
Gary	A. B. Harris	29 S. Capitol Ave.	1st & 3rd Thursday	Commercial Club	Cleveland	Geo. D. Biery	E. 95th St.	2d Wed.	Builders' Exch.
Indianapolis	G. L. Skillman	120 W. Market St.	Wed. Ev'g.		Columbus	O. A. Robins	Erner Hopkins	2d & 4th Fri.	Builders' Exch.
Warsaw	F. E. Strauss				Springfield	J. R. Yost		1st Wed.	Nat. Ex. Bank
IOWA					Steubenville	D. C. Hartford		Mon. 6 P.M.	New China Rm.
Davenport	E. Burns	Rock Island	2d & 4th Mon.	Rock Island	Youngstown	F. F. McBride	Builders Exch.		
Waterloo	H. L. Hileman	609 Bluff St.			OREGON				
KANSAS					Portland	F. R. Whittlesey	212 Henry Bldg.	2d & 4th Monday	Cham. of Com.
Topeka	H. S. Lee	816 Kansas Ave.	Mon. Noon	Elk's Club	PENNSYLVANIA				
KENTUCKY					Allentown	A. Hill	Bethlehem	Monthly	
Paducah	W. R. Kitterjohn		Last Thurs.		Bethlehem	A. H. Hill	510 W. Main St.		
LOUISIANA					Catawba	W. T. Kleppinger		Last Thursday	
New Orleans	R. S. Stearnes	336 Camp St.	1st Weds.	Teocalli Hall	Dubois	C. E. Blakeslee	Bethlehem	Monthly	
MAINE					Easton	C. E. Hill	Bldrs. Exch.	Monthly	
Portland	H. T. Boothby	222 Middle St.	1st. Mon.		Erie	Earl Stokes		3rd Friday	Bldrs. Exch.
MARYLAND					Lancaster	A. Deen	1518 Sansom St.	2nd Thurs.	Und'w't's Office
Baltimore	C. P. Pitt	15 E. Fayette	1st & 2d Tues.	Elk's Club	Philadelphia	M. G. Sellers	10 N. Diamond		Builders' Exch.
Boston	J. E. Wilson	263 Summer St.	3d Thurs.	Boston City Club	Pittsburgh	Geo. Burrows	Bd. of Tr. Bldg.	Tues.	Zenke's
Fitchburg	R. M. Gowell	24 West St.	1st Mon.	Fay Club	Scranton	A. J. Fowler	Dubois	Mon.	
Haverhill	H. W. Porter	681 Main St.	2d Mon.	El. Lt. Sta.	St. Marys	C. E. Blakeslee	E. King St.	2d & 4th Tues.	
Worcester	L. H. Treadwell		2d Thurs.	44 Front St.	YORK	A. E. Harris			
MICHIGAN					SOUTH CAROLINA				
Detroit	H. Shaw	613 Lincoln Bldg	Last Thurs.	G. A. R. Hall	Columbia	E. L. Cashion	Sumter, S. C.		
Flint	J. Markle	718 S. Saginaw	Tues. Noon	Ass'n of Com. Cham. Com.	Greenville	E. C. DeBruhl	Ideal Elec.		
Grand Rapids	M. Randall	Exch. Place			TENNESSEE				
Kalamazoo					Chattanooga	Carl Schneider	412 Kirby Av.	Wednesday	Manhattan Cafe
MINNESOTA					Knoxville	H. M. Moses	615 Market St.	Noons	Rwy. Lt. Co.
Duluth	Alfred L. Foster	210 W. 1st St.	1st Tuesday		Memphis	H. A. Street	285 Madison Av.	Monthly	Allyn Cafe
Minneapolis	A. P. Peterson	2395 University Ave., St. Paul	2d & 4th Tues.	Builders' Exch.	Nashville	J. B. Mullen	Arcade	Ev. other Wed.	Tularis Hotel
St. Paul	A. P. Peterson	2395 Univer. Av.	2d & 4th Mon. 6:30 P. M.	Elk's Club	TEXAS			1st & 3d Wed.	
MISSOURI					Dallas	P. B. Seastrunk	Lepscombe Elec. Co.	Wed. 8 P.M.	1805 Main St.
Kansas City	Mr. Brown	809 Delaware	Tues. Evenings	University Club	VIRGINIA				
St. Louis	F. Lyle	Wainwright Bldg.	Wed. Evening	Am. Hotel	Norfolk	K. D. Briggs	Arcade Bldg.	Wednesdays	Old Col. Clb.
NEBRASKA					Richmond	W. A. Cutlett	Jeff. & Grace Sts		
Omaha	T. Mustain	315 Neville St.			WASHINGTON				
New HAMPSHIRE					Seattle	T. C. Smith			
Portsmouth	F. C. Hatch	Kittery	2d & 4th Wed.		WISCONSIN				
					Milwaukee	Henry C. Hutton	719 Majestic Bld.	2nd Tuesday	Maryland Hotel
					CANADA				
					Toronto	J. A. McKay	110 Church St.	2d Tues.	Bd. of Trade
					Vancouver	J. C. Reston	411 Howe St.		724 Pacific Bldg.

Associations can secure listings here by sending necessary data to the National office

File Your Classification Card

Have you filed your classification card? In the monthly bulletin sent out by National Headquarters in the middle of December all members were urged to send in their classification cards immediately if they had not already done so.

Each member of the National Association should take it upon himself to take care of this matter promptly in order that there may be no inaccuracies in his classification. The National Constitution provides: "In case of the failure of a member to file a classification card by January 20 in any year the classification for the new year shall be fixed by the secretary as the next class above the member's previous classification."

Code Committee Meets

A Penn Denton of Kansas City Given Important Chairmanship

The postponed meeting of the Electrical Committee of the National Fire Protection Association was held in New York City on December 5 and 6 to discuss plans for the next revision of the National Electrical Code.

Representing the National Association of Electrical Contractors and Dealers, A. Penn Denton of Kansas City attended the Code Committee meeting, and he reports a most interesting session. Mr. Denton believes that every member of his organization should give more time and attention to the contemplated revisions, and he is now planning a vigorous campaign toward the accomplishment of that end.

Dana Pierce, secretary of the Underwriters' Laboratories and chairman of the electrical committee on Code revision, appointed Mr. Denton to the chairmanship of one of the most important committees, that which is known as the Committee on Wiring Standards and Systems. Other members of this committee were C. G. Creaghead of the Electrical Supply Jobbers' Association; R. P. Strong, secretary of the Louisiana Fire Protection Bureau, and V. H. Tousley, chief electrical inspector of the City of Chicago.

After a lengthy discussion on the relation of the National Electrical Code to general safety requirements, a vote was taken to instruct the standing committee to consider safety to persons as well as safety from fire hazards in its development of the Code.

In order to receive and consider new devices, materials, systems and methods for which there is no provision in the existing Code, a committee on New Developments was appointed. This committee will not deal with products which involve only changes in the existing rules. It is empowered to accept or reject the recommendation of any new product for introduction in trial installations.

After considerable discussion concerning the 660 watt rule, the meeting discussed plans for the committee work on the next edition of the Code, which has been postponed until 1923.

Building Interests Meet With Electrical Men

A meeting of the building interests was featured at a luncheon of the Los Angeles Electric Club held in the Alexandria Hotel on November 28. This was arranged with the assistance of the Co-operative Campaign that has been going on in the Los Angeles district for some time.

The attendance at this luncheon totaled nearly four hundred, including about one hundred and seventy-five architects, builders and realtors identified with the designing, construction and selling of homes in Southern California. As the purpose of this meeting was to promote convenience outlets, pamphlets were distributed describing and illustrating the

standardized convenience outlet in single and duplex types, as well as a supply of model house wiring diagrams.

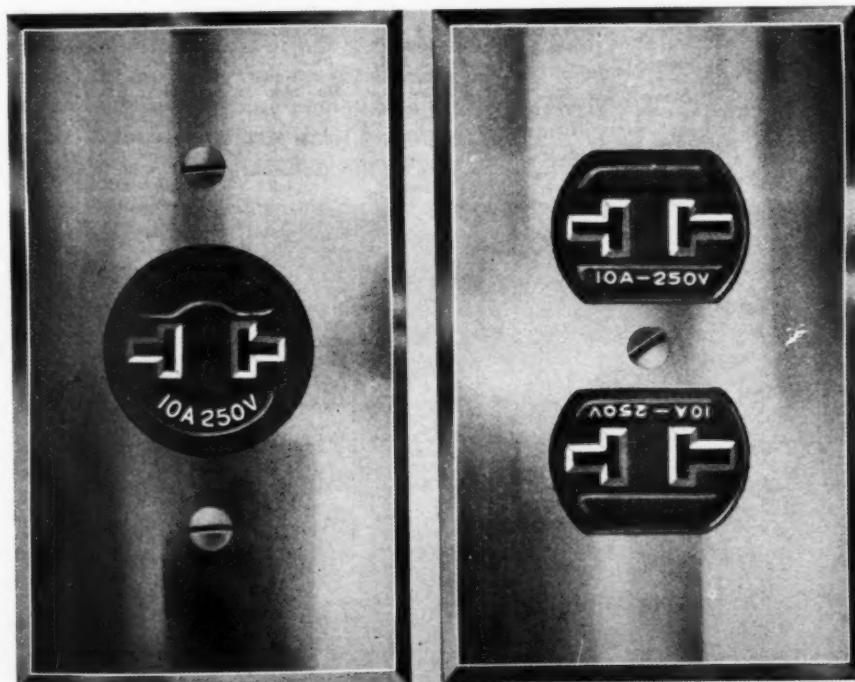
A week previous to this meeting a similar program was carried out in San Diego, and some time before that the same scheme was initiated before the Electrical Club of Oakland.

According to Garnett Young of San Francisco, who is doing extensive work in the promotion of convenience outlets and allied standardization work, such a program will be presented before the Electrical Development League of San Francisco probably sometime during this month. In this connection, Mr. Young advises that supply manufacturers are already shipping the standardized convenience outlet in the San Francisco territory with labels carrying this name instead of the old name of "flush receptacles."

Mid-Winter Meeting at New Orleans

A mid-winter meeting of electrical interests will be held at New Orleans for four days from January 17 to January 20 at the Grunewald Hotel under the auspices of the Electrical League of that city. The Louisiana State Association is coöperating with the Electrical League to make this meeting one of exceptional benefit to all who attend.

A group of N. E. L. A. committee meetings is scheduled to be held in New Orleans at this time and coincidentally it



These Are Slightly Reduced Size Photographs of the Te-Slot Type of Convenience Outlet Now Standard With Nearly all Manufacturers of Wiring Devices in the United States and Which Are Being Used by California Interests

is proposed to hold meetings of the Mississippi State Association in joint session with the Louisiana members. It is also proposed to hold meetings of the Dixie Club, who represent the jobbers of the South, and the Old Conference Club.

Arrangements include one general meeting where broad questions now affecting all electrical interests will be discussed, and a get together dinner. Special arrangements have been made for golf, and a visit to the points of interest in New Orleans. Among those who will give leading addresses are the good will promoters Wm. L. Goodwin and Samuel Adams Chase. Laurence W. Davis, special representative, will represent the National Association and will speak on its work.

The general chairman of the arrangement committee, Col. Robley S. Stearnes, whose address is 336 Camp Street, New Orleans, La., will be glad to hear from those interested, and will arrange for hotel accommodations for all who so request.

Meeting of Massachusetts State Association

"Three Hundred Members Before March, 1922," is the slogan of the next meeting of the Massachusetts State Association to be held in Springfield, Mass., on January 5 at the Hotel Kimball. A number of prominent men in the industry will address those present on this occasion.

After the business session which begins at two o'clock in the afternoon a question box will be held and it is expected the answers to questions will prove very interesting. Quite a number of advance questions have already been submitted to the secretary, J. E. Wilson. The accompanying illustration shows only one of the clever ideas Mr. Wilson has used to get electrags to send in their problems to him so that he can submit them to this meeting.

At six o'clock a banquet will be held in the ballroom of the hotel, the menu for which will be elaborately prepared.

The local electrags have prepared a special entertainment the nature of which will be a surprise to the visiting members. It is hoped that this meeting will prove

such an enjoyable one that Springfield will be chosen as the meeting place again a year hence.

Attend the Fixture Market

Everyone who is interested in better lighting should plan to attend the third Annual Lighting Fixture Market at Milwaukee which will be held from January 30 to February 4. This great exposition will take place in the noted Milwaukee Auditorium and will mark the second joint convention of the National Council of Lighting Fixture Manufacturers, the Dealers' Society of America and the Illuminating Glassware Guild.

The Lighting Fixture Market this year, it is said, is the most looked for event within the electrical and building industry. Architects, builders, dealers, home owners, glass manufacturers, fixture manufacturers, central station men and other interests will be represented among the attendants.

The latest improvements and newest designs of their respective products will be exhibited by the manufacturers of fixtures, portables, lamp shades, illuminating glassware and other lighting equipment. More than one hundred booths have already been leased, and much space is being taken daily by new exhibitors.

After careful consideration of the relative advantages of the various railroads, the Chicago, Milwaukee & St. Paul has been selected as the official railroad for the conventioners and arrangements have been made to secure reduced fares for those coming via this route.

From January 30 right up to the closing date there will be something doing

every minute. The mornings will probably be devoted to the convention meetings and the afternoons to the Fixture Market, just as the last highly successful Fixture Market at Buffalo.

There will also be held during the convention a Better Lighting Week. Demonstrations of better lighting methods for homes, offices and industrial plants will be given, together with free surveys and reports on improvements possible in existing lighting installations.

The wonderful reconstruction of the progress of lighting fixtures and methods from the flaring torch of the cave man to the artistic illuminating equipment of today will be demonstrated by means of the Pageant of Light.

Interest is being stimulated in the Market by extensive publicity and advertising in leading mediums in every section of the country, and it is expected that the convention this year will prove more successful than any ever before held.

Utica Builds First Home Electric

Influenced by the success of the electrical homes that have been built in several western cities, the Electrical League of Utica, N. Y., assisted by the Society for Electrical Development and the National Electrical Society, has succeeded in building one of these model homes in Utica, which was opened to the public from December 3 to December 18.

The Electrical League provided the plans and specifications for wiring and equipping the home electrically, and these plans which provide for the maximum of efficiency and convenience are considered by experts the most complete and up-to-date ever devised for such a purpose. Much of the equipment in the home was installed by members of the League.

Practically every electrical device that has thus far been perfected to the point of practical use in the home could be seen in this model home electrical. These comforts and conveniences were so arranged that they could be easily demonstrated.

Through the construction of this modern electrical home it is believed that the broader knowledge of proper wiring and electrical equipment plans for private residences will be of material advantage to home builders and home owners in the city of Utica.



New England Electrags Urged to Send Problems to J. E. Wilson, Secretary

Some Sound Advice to Electragists

By J. E. BULLARD

At Meeting of Rhode Island Electrical League in December Speakers
Emphasized Need of Adhering to Basic Principles in all Business Practice

At the meeting of the Rhode Island Electrical League held in Providence on the evening of December 6, both the contractor and the dealer were given attention. G. B. Quimby, chairman of the Massachusetts Contractors' and Dealers' Association talked on the "Salvation of the Contractor," and George C. Graham of Beaudette & Graham of Boston talked on the "Past, Present and Future of Electrical Home Appliances."

E. L. Milliken presided at the meeting and there were approximately a hundred in attendance.

Mr. Quimby opened his talk by pointing out that the National Association of Electrical Contractors and Dealers was a building up force. "The salvation of the electrical contractor, the electragist," he said, "lies in coöperation. Every successful enterprise depends upon coöperation. There must be a coördination of interests. The principal points brought out in Mr. Quimby's paper were as follows:

This year the contractors are getting representation on the committees of the National Electric Light Association. They are getting enthusiasm and ethics of business. They are collecting data and distributing it broadcast.

This gives the little fellow in the little country town the same advantages that are enjoyed by the man located right in New York City, for example. The national associations gather this material, material that an individual contractor could not gather, and take it to him.

Knowledge of Costs Essential

Work is being done on costs. Contractors do not know their costs. Mr. Hurley has stated that half the men in business today do not know whether they are making money or not. As a matter of fact it is much easier to make money than to find out how it is made, to find out what causes losses and what results in profits.

There is just one kind of coöperation that is wanted. The coöperation that has the best interests of the industry at heart. All selfish ideas must be gotten rid of. There is no gain in trying always to get the best of the other fellow.

The overhead must be studied and it

must be figured. There are far too few contractors who have any idea of what their overhead is. This is bad for the industry. Each contractor should know what his overhead is and he should always figure this into his estimates. If he does not he cannot do a healthy business and he cannot coöperate for the good of the industry.

There must be coöperation with the central station and the jobber. Both want the coöperation of the contractor and are willing to coöperate with him in return.

The best and the latest should be sold. Using old style material, old designs because they are cheap and make it possible to do the job at a lower price, leaving out everything on a job that can be left out and still have the job pass inspection retards the industry. It must not be done.

Dangerous Practices

Inefficient jobs, those poorly done, inaccurate cost figuring, poisons the minds of the customers. There is a job upon which we figured and included every uptodate device. It was to be as perfect a job as could be done. Along came a man who said he could do it a lot cheaper. He showed how by leaving out here and there money could be saved. He got the job. But in one year, two years or five years at the most that customer is going to be sorry that he did not have the job done right in the first place. The contractor who goes around doing business in this manner is doing a great deal of harm to the industry. Often he does not make even a living wage for himself.

A poor job always makes a bad impression and is the wrong kind of coöperation. We must give the best in us to the industry. We must give real service and build up the industry through honest competition. If a man figures in his overhead honestly, if he figures the job according to his actual costs, he should get it and no other contractor should lower his price to secure it. In fact no other man can get it if he is honest and has figured his estimate carefully.

It is time to realize the dignity of the contracting business and to push ahead with the central station and the jobber.

We will surely go back if we do not. If we don't give service someone else will have to give it and this will have to be the central station or the jobber. If we don't give service we will not be needed and the central station and the jobber will discard us.

Adopt Sound Principles

The lack of business training and of business ethics of the other branches of the electrical industry is a weak point in the contracting business. There must be education. The contractor must be trained along business lines and he must be taught business ethics.

We must establish confidence. Let the electragist be alive and uptodate. Let him be a man others will be glad to deal with. Cooperative service wins confidence. All little mean practices hurt the industry. It is important that people believe the word of the contractor.

Architects, engineers, all those who direct and supervise big building operations and who have the giving out of contracts are going to be more and more careful to whom they give work. You can't fool these engineers and architects who know their jobs. It is necessary to figure honestly when figuring for them.

When a job is figured below costs it should be analyzed and studied and the mistakes made discovered so that they will not be repeated. No one wants to do business with a fellow who is not making money.

The only way that the problems can be solved is by getting together and coöperating, by talking the common problems over together. We must rub elbows. We must know costs and be real, live, honest to God, contractors. Coöperation through service and service through coöperation wins confidence. This means success.

Pawtucket Electric Show

After the talk of Mr. Quimby, H. L. Pettengill, Jr., of the Blackstone Valley Gas and Electric Company gave a brief report of the electric show held in Pawtucket, November 30 and December 1, 2, 3.

It was originally decided to have the show about two weeks after the show planned to be held in Providence in November. Work was started at once

in arousing enthusiasm and when it was learned that no hall could be secured in Providence till sometime in January so that the Providence show had to be postponed things had gone so far in Pawtucket that they couldn't stop even though there would not be the publicity of the Providence show to profit by.

It was decided to hold the show under the auspices of the Rhode Island Electrical League, the League handling the advertising and the like. Accordingly only those dealers who were members were to be permitted to take part in it. The committee of five that had been appointed to plan for the show got busy. Fourteen electragists were interested but only six were members so the other eight joined the League in order to take an active part in the show.

There were fifteen exhibitors. \$150 was spent with a window display man to make suitable window displays at the hall, stickers were used on all the automobiles of the contractors, dealers and central stations, seventy-four electric car signs were used. Prizes totaling \$450 were given to the public. The decorations cost \$675. The total cost aside from the cost of making the display of the dealers and contractors which of course they assumed themselves was about \$2,000. The booths were rented to the exhibitors at from \$35 to \$50 plus \$6 insurance.

Unusually Large Attendance

On the first day 2,400 people attended, on the second day, 3,200, on the third day 3,900 and on the last day, Saturday, 6,000; the total attendance being 15,500. This count was taken from tickets passed out, and was not exactly accurate for some might not have secured tickets. It is estimated therefore that probably 20,000 people saw the exhibition during the course of the four days it was open from two to nine in the afternoon.

In spite of the large number of people who attended it was never at any time necessary to close the doors. The people came in a surprisingly steady stream, looked at the exhibits and passed out. It was a great success and the very best people came to visit the show. The result has been the cementing of the relations of the contractors, dealer, central stations and the public at large.

Mr. Graham then spoke in effect as follows:

It is necessary to render service at a profit. Comparing the past with the present, in 1911 only 20,000 washing machines were manufactured while in 1921 1,026,000 were manufactured. Yet the industry is still in its infancy. There are 8,610,000 wired homes and less than half of them have vacuum cleaners and the number of wired homes is constantly increasing. The field cannot be saturated.

Appliance Business Second

There is a great big future in the appliance business. Roger Babson, the statistician, has said that it is the second big best business. It may be larger in a few years than the automobile business. The stage is set. The people want the appliances. The manufacturers have them for sale. The dealer must render the service of selling them at a profit.

To make a profit and to render service at the same time it is necessary to do four things:

1. Sell the best.
2. Maintain uniform price and policy.
3. Close sale as quickly as possible.
4. Maintain an efficient service department and know when to charge for service.

There are 137 washing machine manufacturers. They are not all sound. It is better for the dealer to sell only the well advertised standard appliances, those made by well known manufacturers who can be relied upon. It is bad for a dealer to begin selling a machine that will disappear from the market in a few years and for which when parts are needed it is hard if not impossible to get them.

Often a dealer is misled by discounts. The discounts may not be enough to make up for the increased cost of selling the machine. It certainly will not make up for the bad impression caused by carrying goods that are not standards and which cannot be replaced.

Specialize But Don't Cut Prices

Specializing will increase sales and profits. It makes the rendering of service easier and makes it possible to give the service promptly when it is wanted.

Cutting prices means giving away the profits. There is not a large enough

margin on any electrical appliance so that prices can be cut without giving away the profits. At the same time customers don't think much of a man who cuts down his price. Such practices may work all right in other countries but ours is a country of uniform prices and if the dealer is to make a good impression he must stick to the price that he has made.

Money is lost when the sale is not closed promptly. Don't leave a machine out too long before closing the sale. Turnover is necessary and this is reduced if machines are left out too long. A few days or a couple of weeks should be long enough for a person to learn whether or not he wants the appliance.

Service is a big item. We have found that service calls cost us on an average of about five dollars a call. By selling the best appliances you cut down the need of service. We used to give one year of free service. We have now cut it down to 60 days and have also found that many service calls can be handled in such a way over the telephone that it is not necessary to send out a man.

Education Big Factor

It is largely a matter of educating the public. Before we cut down our free service, we gave the matter very careful attention. We feared that it would react, but it has not. The public is willing to pay for what it gets. It would rather have good service at a fair price than poor service free.

Appliances like refrigerating machines and washing machines fall in a different class from other appliances. These are new and require more free service. People have to be taught.

In selling we specialize. One set of salesmen sell washing machines and ironing machines. Some of them take the machines right along with them on a Ford truck and demonstrate as they go. Some of them are exceptionally successful in making sales in this way, a large proportion being closed on the first call.

The cleaners are handled by crews of five or six men working under a crew leader and all working on a commission basis, the leader getting a commission on all the cleaners sold by members of his crew. These men become very expert in their work and the best men close sales on the first call.

In the case of washing machines and

cleaners we require 20% of the purchase price for the first payment. In the case of dish washers the money is collected at the time of making the sale. It has been found that a person must use such a machine for two or three weeks before getting accustomed to it and that they are not likely to do this unless they have already paid down the full purchase price.

The refrigerating machine is a problem by itself. It seems to be necessary to do business on a large scale in order to make money in handling them. The day is soon coming, however, when there will be a big business in this appliance.

Standardization of Receptacles

Every electragist should take to heart Mr. Wynkoop's suggestion contained in his Code Chats page of the Contracting Department of this issue, that missionary work should be done upon the architects in order to persuade them to stop specifying non standard receptacles for convenience outlets.

That the greatest freedom in the sale and use of appliances is essential to the development of our work needs no argument; and yet item after item can be cited to show that needless restrictions prevail—due to custom, or indifference, or ignorance.

Here we have a case where the remedy is so clear and so simply applied that we shall be greatly disappointed if the installation of non standard base-board receptacles is not promptly abandoned.

Doings in Canada

At the meeting of the Hamilton District Electrical Association held in November, V. K. Stalford, special representative, outlined plans for the Electrical Development League.

An extensive newspaper campaign of advertising has been carried on to promote this project, two entire pages be-

—WE DO— EVERYTHING ELECTRICAL

Factory lighting and power, installation, house lighting, sub-stations, motor work.

We re-wind and repair motors. Our service is the best. Just call us when you have anything in the electrical line. We give you the best.

JACK BROS. Electrical Construction Company ELECTRAGISTS

This name stands for distinctive work and service.

224 MAIN STREET EAST

Phone Office, Reg. 7692. Night Calls, Reg. 2520W

ing taken in a leading Hamilton daily in the middle of November and three more were taken early in December. Mr. Stalford advises that electrical pages

25,000 Hamilton Homes Need Electric Ranges

Why Not Get Yours for Christmas?

For \$9.50 you can have an Electric Range put in your home to-day.

A small amount monthly quickly pays the balance.

With an electric range, kitchen work is vastly simplified.

By simply touching a button, adequate heat for every cooking need is instantly available.

There are no dirty, smoky utensils to keep clean.

Meats cooked electrically are richer and juicier, bread is moist and beautifully browned.

Call at the Hydro Shop and have us show you just how desirable these ranges are.

At the Hydro Shop you will also find Electric Washers, Vacuum Cleaners, Refrigerators, Lamps, Irons and Percolators.

COME IN AND LOOK AROUND

THE HYDRO SHOP

PHONE REGENT 4905.

CITY HALL

Ask for Hydro Quality Lamps

will be published in the near future in a number of other Canadian cities including St. Catharines, Ottawa, Windsor, Kitchener, Brantford, London, Toronto, and Guelph.

Displayed on this page are several advertisements that were run in the pages of the *Hamilton Spectator*.

The Hamilton Electrical Development League, which consists of members of all branches of the industry, has planned a prize story contest as a promotional feature in the particular interest of young people. It is hoped to have these story contests weekly in the daily press, and cash prizes will be given for the best stories on the uses of electrical appliances.

It is proposed to open an electrical home, fully furnished for inspection by the public. Electrical appliances for the home will be demonstrated, in addition to an industrial lighting exhibition to demonstrate the use of modern types of industrial lighting.

The development campaign will close with an electrical show, plans for which are now being arranged for on an elaborate scale. This will be the first exhibition of this kind that has ever been held in this part of Canada.

Rocky Mountain League News

This is the name of the bulletin recently issued by the Rocky Mountain Electrical Coöperative League which will be distributed to member periodically to keep them informed of the League's activities as well as other happenings in the electrical field.

The Rocky Mountain Electrical Coöperative League was organized in Salt Lake City in October, 1920, by a group of representatives of the various branches of the electrical industry in Utah and neighboring states. The principal objects of the League as outlined in its Declaration of Principles are to promote in a practical way the indus-

"DO IT ELECTRICALLY"



An Electric Percolator From Santa Claus

What woman will not be delighted with the gift of an electric coffee percolator? These may be had in many sizes, finishes and prices. Any electrical dealer will be glad to show you many dainty and desirable designs; also a full line of other electrical labor-saving devices. A small deposit will hold any article until Christmas. Make your selection now while stocks are complete.

MAKE YOUR GIFT SOMETHING ELECTRICAL

Only 18 more shopping days before Christmas.



The Three Pages in the December 3 Issue of the *Hamilton Spectator* Bore This Masthead

trial, commercial and social welfare of its members to participate in activities for the improvement and expansion of the electrical business and to be of greater service to the public; to enlighten the public on the subject of electricity, its uses and advantages, and to stimulate the sales, installation and use of all kinds of current consuming devices.

Western Inspectors Meet

The seventeenth annual meeting of the Western Association of Electrical Inspectors will be held on January 17, 18, 19 at the Hotel Sherman at Chicago. Morning sessions will begin at ten o'clock while the sessions of the afternoon will convene at two o'clock.

According to a tentative program, after the address of welcome by Mayor William H. Thompson and the reply by O. M. Frykman of Minneapolis, the morning session on Tuesday will be devoted for the most part to Association business. The afternoon session will be devoted to addresses.

A discussion of inspectors' problems will take place on Wednesday morning and members are urged to present their problems to the secretary, Wm. S. Boyd, in writing as far in advance of the meeting as possible. The afternoon session will convene at the Underwriters' Laboratories, where tests of electrical fittings and other material will take place.

Thursday will be devoted to a further discussion of inspectors' problems after which Association business will again be taken up, the meeting closing with the election of officers. On Friday various tours of inspection will be made to points of interest about the city.

State Secretary Changes Position

A. I. Clifford, secretary of the Indiana State Association of Electric Contractors and Dealers, and sales manager of The Sanborn Electric Company of Indianapolis, has resigned from his position to take up active work with the Utensils Company of Fort Wayne, Indiana.

Mr. Clifford has had a long experience in the electrical business starting in 1895 with the Anderson Railway & Light Company and afterwards being connected with the Railway & Light Company of Kokomo, Indiana, as master mechanic. In 1906 he moved to Decatur, Illinois,

and took charge of the shops of the Illinois Traction System.

Mr. Clifford returned to Indianapolis in 1915 taking a position with the Indianapolis Electric Supply Company as a specialty salesman. In 1917 he moved to Fort Wayne and organized the Luxam Electric Supply Company which was the electrical jobbing department of Fort Wayne Oil & Supply Company. While in Fort Wayne he organized two companies, the Utensils Company, for manufacture of Utenco ironers, and C. M. C. Electric Sales Company, the latter being factory representatives of the Utensils Company for the central states.

In 1920 Mr. Clifford took the position of sales manager for The Sanborn Electric Company and was appointed secre-



A. I. Clifford

tary of the State Association of Electric Contractors and Dealers. In connection with the latter work he was very active in increasing the membership and the organization of local branches in Fort Wayne, South Bend, and Terre Haute.

After January 1 Mr. Clifford will devote his time to his interest in the Utensils Company, the C. M. C. Electric Sales Company, and the work of the State Association.

Electric Vehicle Men Meet

The first of a series of conferences on trucking problems in New York was held on December 2 when the local electric vehicle men got together at a meeting called by the New York Edison Company.

These meetings will continue throughout the winter and some of the subjects announced for future discussion are winter trucking, retail store deliveries, and

the handling of mail in New York. Advertising, garage practices and tire problems will also be considered.

Meeting of Supply Jobbers

Much Enthusiasm Over Interesting Talks at Semi Annual Convention at Cleveland

A very enthusiastic meeting of the Electrical Supply Jobbers' Association was held in the Cleveland Hotel, Cleveland, from November 28 to December 2. Several hundred were in attendance and many prominent addresses were made.

On Monday, November 28, the executive committee held three sessions, also another on Tuesday afternoon. On the morning of November 29 the Atlantic Division met at ten o'clock. At eleven o'clock on Wednesday an open session of all divisions was held, and in the evening there was an executive committee session. On Thursday, there was an executive session of all divisions at ten o'clock, and an open session in the afternoon. On Friday all divisions held an executive session at ten o'clock.

Preliminary to the main convention the Atlantic Division interests met and after the roll call were addressed by Wm. L. Goodwin, the industry's good will promoter, who spoke on his favorite topic—promoting economical development of the electrical industry. Charts were used to illustrate his remarks.

After the main session had convened on Wednesday, November 30, Frank Watts of the Gage Publishing Company spoke on the subject "The Electrical Contractor-Dealer as a Construction Man and as a Merchant." Mr. Watts said that in the last few years a new type of contractor has come into existence, one who had made merchandising equal to contracting, and that this is the reason for so many failures. It was Mr. Watt's belief that a contractor should not be encouraged to go into the retail business by the manufacturer or jobber unless he showed ample evidence that he would make a success of the new work.

The National Association was represented by J. R. Strong, national chairman, who in his address, "Electrify for Electragists," took exception to Mr. Watts' remarks, saying that there is no real reason for separating contractors from dealers and that present difficulties would be largely overcome if each and everyone would work constructively

toward creating more convenience outlets for the distribution of appliances. He did not believe that electragists are devoting more attention to merchandising than to contracting in proportion to the interest of each.

Mr. Strong said the aim of the National Association as well as the Supply Jobbers' Association should be to develop the dealer, that a reasonable average overhead should be determined, and that a larger differential should be allowed between retailer and manufacturers' prices. In closing he said that contractors should develop wiring and that dealers should have a wider margin of profit in order to be successful.

On the last day of the convention W. W. Freeman, president of the Society for Electrical Development, and F. M. Feiker, assistant to Secretary of Commerce Hoover, addressed the meeting.

To Hold Electrical Show

At a recent meeting of the Lehigh Valley (Penn'a) District Association it was decided to have an electrical show for one week in the latter part of February. This show will be called the Lehigh Valley Electric Show and will be held in the Dreamland Auditorium in Allentown. This auditorium has a floor space of 33,000 square feet and is located midway between Allentown and Bethlehem.

S. E. D. Adds to Permanent Staff

In order to handle new and enlarged activities the Society of Electrical Development has made the following additions to its permanent staff: Walter S. Dickson, Mrs. L. C. Read, and Mrs. Lillian Cassels.

Mr. Dickson, of the research department, brings to the Society a broad experience in engineering and research work. He has made extensive business trips both in this country and throughout South America in the interests of large engineering projects. He has also given considerable time to furthering the work of a number of national technical societies.

Mrs. Read will head the newly formed department of home economics. By her previous experience she is well qualified to prepare much of the Society's publicity data for magazines and the daily press. In addition to this work

she will also devote a part of her time to addressing meetings of women's clubs on the application of electricity to the modern home.

Mrs. Lillian Cassels, who will be in the home economics department, is an exceptionally capable writer and appreciates thoroughly the woman's point of view. She will prepare newspaper feature articles, special magazine items and copy for booklets for distribution to the public.

A Successful Mid-Westerner

Rufus G. Gentry of Central Station Fame is Interested in Electragists

Rufus G. Gentry represents the appliance and new business departments of the Denver Gas and Electric Light Company in the Denver Association of Electrical Contractors and



Rufus G. Gentry

Dealers. The central station company which he represents takes a lively interest in the problems of Denver electragists and will always be found helping them in the coöperative movement which is being conducted so successfully in that city by the Electrical Coöperative League.

Just twenty-one years ago Mr. Gentry went to Denver from Little Rock, Ark., and became a member of the sales department of the old Denver Gas and Electric Co. Under his direction the sale of gas and electric appliances has increased five hundred percent, a record which stands at the head of all similar accomplishments of sales in that city.

According to the *Denver Commercial*, Mr. Gentry is one of those men

who is endowed with the rare vision of things pertaining to civic affairs and is always ready to render his services in the unceasing campaign of education for the development of Colorado's industries and resources. He has done much toward creating that necessary feeling of good will of the business men of that city to public utilities which the progressive central station man is always striving for.

He was one of the group of two hundred business men who secured a charter of the Lion's Club and since the Denver Electrical Coöperative League was organized has served as one of the central station representatives on its advisory committee. He held the secretaryship of the board of trustees of the Colorado Woman's College for nine years and is at the present time serving as a member of that board.

Mr. Gentry was reelected treasurer of The Colorado Manufacturers' Association at its recent annual convention in Canon City, Colo. In addition to his duties in that organization he is also an active member of The Denver Civic and Commercial Association.

Standardizing Fixture Parts

BY CHAS. F. HOFRICHTER

This Work Being Carried on by National Council Lighting Fixture Manufacturers

Nothing is more disconcerting when assembling parts which are supposed to be used with each other than to find they will not assemble properly. Such a fault is unforgivable particularly in large industrial plants where on their own products standardization of parts has been carried to the point that these conditions have been eliminated.

Furthermore, such plants have found that after proper standards have been once established, it is as easy if not easier to maintain them as it is to depart from them. Standardization means the establishment of boundaries as regards the shape and size for mating parts in such a manner that parts made within these boundaries will always assemble properly.

To establish the proper boundaries two conditions must be considered. First, the largest internal member must always be small enough to assemble into the smallest external member. Second, the smallest internal member must never be too loose in the largest external member to hold together properly.

The difference in size between the largest and smallest internal member or the smallest and largest external member is known as the "tolerance," or the amount of variation in size which can be tolerated.

When the different parts of an assembled unit are manufactured in different plants, standardization is most essential. Otherwise the customers will be caused to make constant complaints about an unsatisfactory product.

With proper standards once established the production of such parts is much simplified. Furthermore in the event of receipt of unsatisfactory parts the customer himself has the means of determining which parts are in fault and thus is enabled to place the blame where it belongs. In this way the careful and reliable manufacturer is afforded a means of protection while the irresponsible one is exposed.

After standards have been once established it is a simple matter to measure the parts of the tools for producing them, to ascertain whether or not they fall within the boundaries established by such standards. These measurements may be made by any suitable measuring instruments.

In general, however, when certain fixed dimensions are constantly used, it is much more economical to measure them with special measuring devices known as gages than it is to use standard measuring tools and make the many computations from these measurements which are so often necessary.

A gage is a special measuring tool representing the physical dimensions of some standard part. Its use enables even complicated parts to be measured quickly and accurately. Often these parts are so designed that both boundaries or limits of an established standard are defined. Such gages are known as limit gages. The use of such gages enables a part to be measured very quickly to see whether or not it is between the proper boundaries.

New Officers Elected

At the regular meeting of the Electrical Contractors and Dealers' Association of Salt Lake City held on November 30, the following new officers were elected: President, E. H. Eardly; vice president, F. C. Wolters; secretary, G. W. Forsberg; treasurer, L. G. Robins.

G. W. Forsberg; treasurer, L. G. Robins of the association, says that the growing membership shows keen interest in the work and that through united effort many problems are being solved.

Electrical Development Report

It is stated that 83,109 people visited the three electrical homes of Cleveland during the time they were open to the public, according to a report of the Cleveland Electrical League announcing the results of the electrical development campaign the League carried on from September 1920 to December 1921. This report shows that much progress has been made through coöperative effort of the various electrical interests of the fifth city to educate the people to a better understanding of things electrical.

In expressing his appreciation to those who helped carry out the program set by the Electrical League, Campaign Director Jack North says: "The success of the campaign can be attributed to the very keen appreciation of the necessity of unselfishness on the part of those who wish to continue to make Cleveland the most desirable electrical city in which to conduct a business.

"Public interest has been aroused; the entire community has been impressed with the thought Do It Electrically. A desire for something electrical has been created in the minds of thousands and results are bound to come with the gradual improvement of financial conditions."

According to a folder recently issued the following goals have been set for 1922 by the Electrical League of Cleveland:

1. To continue the educational campaign which was so successful under the direction of the members council.
2. To continue the members council with its twenty-one members, three from each group.
3. To establish a Bureau of Electrical Information.
4. To coöperate with city officials and others in the enforcement of the Electrical Code.
5. To equip and open for public inspection a modern electric factory.
6. To employ special representatives who will endeavor to make every new house a *Modern Electrical Home*.
7. To distribute to prospective home builders information on wiring, fixtures and appliances for the home.

8. To employ two representatives to render service to electric range owners or users.

9. To open to the public about June 1st, the fourth modern electrical home.

Annual Meeting at Allentown

The annual meeting of the Pennsylvania State Association will be held in Allentown on February 14-15. It is expected that a number of prominent speakers will address this meeting, and for any information concerning it communications should be addressed to R. W. Keck, chairman, Allentown, Pa.

Electrical Interests Combine

The electrical interests of Milwaukee, among which are the Chandelier Club, the Illuminating Engineers, the Electrical Contractors and Dealers' Association, the Electrical Association of Milwaukee, the Electrical Manufacturers and Jobbers, and the Central Station have combined forces to promote better lighting in Milwaukee and throughout the state of Wisconsin.

The work is being carried on under the auspices of the Electrical Development Association of Wisconsin, successor to the Milwaukee Electric Show Association and the officers are as follows: President, R. M. Van Vleet; vice president, Phil Polacheck; secretary, F. A. Coffin; treasurer, P. C. Burrill.

The Association has established a bureau in the First Wisconsin National Bank Building, where all question relating to the wiring of buildings and electrical illumination will be answered free of charge by experienced lighting experts. While the Association does not take contracts nor sell fixtures, part of its free service consists in furnishing approximate estimates on both.

The main purposes of the Association are the dissemination of up to the minute information on better lighting among those engaged in the electrical business, informing the public through every effective agency of the value of better lighting in the home, in the office, the store and the factory and finally backing up this publicity by means of actual demonstrations.

The financial, physical, moral and artistic advantages of better lighting will be explained and emphasis will be placed on the fact that better lighting is easily within the financial reach of

all who are able to enjoy even the moderate comforts and conveniences.

The publicity is in charge of a publicity committee, the members of which are F. A. Coffin, J. C. Schmidtbauer, and Arthur Polacheck. Charles L. Benjamin of Chicago and Milwaukee has been appointed director of publicity.

Separate Specifications

Requirements in Three States for Mechanical Equipment in Public Buildings

M. G. Sellers, secretary-treasurer of the Pennsylvania State Association of Electrical Contractors and Dealers, has recently issued a folder setting forth the state laws of Pennsylvania, New Jersey and New York relating to separate specifications for mechanical equipment in public buildings.

These extracts were compiled by the joint legislative committee of the Pennsylvania Master Plumbers, Heating and Piping, and the Electric Trades Association, and the main features of the enactments are quoted as follows:

Pennsylvania

Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same that hereafter in the preparation of specifications for the erection, construction and alteration of any public building when the entire cost of such work shall exceed one thousand dollars it shall be the duty of the architect, engineer or other person preparing such specifications to prepare separate specifications for the plumbing, heating, ventilating and electrical work and it shall be the duty of the person or persons authorized to enter into contracts for the erection, construction or alteration of such public buildings to receive separate bids upon each of the said branches of work and to award the contract for the same to the lowest responsible bidder for each of said branches.

New Jersey

Hereafter in the preparation of plans and specifications for the erection, construction, alteration or repair of any public building in this State, whether the same is to be erected, altered, or repaired by the State or any political subdivision thereof, when the entire cost of such work will exceed one thousand dollars in amount, it shall be the duty

of the architect, engineer or other person preparing such plans and specifications, to prepare separate plans and specifications for the plumbing and gas fitting, and all work kindred thereto and of the steam and hot-water heating and ventilating apparatus, steam power plants and work kindred thereto, and electrical work; and it shall be the further duty of the board or body, person or persons authorized by law to award contracts for the erection, construction, alteration or repair of any such public building, to advertise for, in the manner provided by law, and to receive separate bids for each of said branches of work, and to award contracts for the same to the lowest responsible bidder for each of such branches respectively.

A statement on the reverse side of the bill, introduced in the legislature, reads as follows:

The object of this bill is to make it mandatory, in preparing plans and specifications for construction, alteration or repair of public buildings, where same is to cost more than one thousand dollars, to prepare separate plans and specification for plumbing and gas fitting and kindred work; steam and hot-water heating and ventilating apparatus, steam power plants and kindred work, and electrical work, and to advertise for separate bids on such work. This conforms to existing laws in a number of other States, including New York and Pennsylvania.

New York

Separate specifications, for certain contract work. Every officer, board, department, commission or commissions, charged with the duty of preparing specifications or awarding or entering into contracts for the erection, construction or alteration of buildings in any county or city, or the borough of any city, when the entire cost of such work shall exceed twenty-five thousand dollars, must have prepared separate specification for each of the following branches of work to be performed:

1. Plumbing and gas fitting.
2. Steam heating, hot water and ventilating apparatus.

Such specifications must be so drawn as to permit separate and independent bidding upon each of the classes of work enumerated in the above subdivisions. All contracts hereafter awarded by any county, city or borough, or a

department, board, commission or commissioner, or officer thereof, for the erection, construction or alteration of buildings or any part thereof, shall award the respective work specified in the above subdivisions separately to responsible and reliable persons, firms or corporations. Nothing in this section shall be construed to prevent the authorities in charge of any county or municipal building from performing any such branches of work by or through their regular employees, or in the case of public institutions, by the inmates thereof.

Denver Merchandising Campaign

Through the Electrical Coöperative League of Denver, a Christmas merchandising feature was developed for the use of member contractor-dealers in the form of an electrical merchandise gift certificate. Although this scheme had been used in other lines and especially by dry goods stores, it was believed to be the first time such application had been made to the sale of electrical merchandise.

It was developed in Denver as part of the Make This An Electrical Christmas movement which was featured in the coöperative advertising campaign conducted in that city before the holidays. The certificates were introduced during the electrical week, December 5-10. At that time the people of Denver were invited to look around and get acquainted with the strictly electrical shops in order that they might know the service and merchandise awaiting their demand.

The certificates were printed in two colors, red and green, and contained decorations representing the holiday season. The insignia of the Coöperative League was prominently displayed and one of the features represented in the certificate and referred to on the face of it was that the electragist issuing the certificate was a member of the League and as such was giving in addition to his service, whatever advice or counsel was desired in things electrical. Moreover, the League backed the offer, guaranteeing the service of the dealer.

The possibilities of use of the certificate were readily seen in the case of uncertainty on the part of the purchaser not knowing whether the intended recipient had a particular appliance, and if not, whether it could be used. Likewise the certificates made possible addi-

tional sales as in the case of the certificate representing five dollars which was applied on an appliance costing \$7.50. Names of donors and recipients secured through the certificates make good material for mailing lists, it is believed by the League officers.

A four color poster apropos of the holiday season was distributed by the League emphasizing electrical work and the desirability of the merchandise certificates as timely Christmas gifts, and according to S. W. Bishop, executive manager of the League, holiday buying was materially strengthened through the certificate idea.

New Year Calendars Distributed

In order to further develop the good will of the industry in the New England territory where he serves, J. E. Wilson, secretary of the Boston local and Massachusetts State Associations, has issued an attractive New Year calendar to the trade. The picture on it shows the inventor at work with the first electrical experimental tools from which have resulted all the present day electrical improvements and conveniences including the modern power plant and home electric.

Home Beautiful Exposition

Electrical appliances in many forms designed to make easy the work of the woman of the house as well as the scores of handy devices and utility fittings will be in evidence at the second annual Home Beautiful exposition, to be held in Mechanics building, Boston, April 15 to 29.

Space reservations already made include all electrical concerns who exhibited last time, as well as a number of others in allied lines. Requests for floor space now in hand indicate a big increase in the number of exhibitors, which forecasts a much larger and more representative exposition.

Men who are planning to build and women who are making interior changes for the sake of efficiency will find at this exposition every worthwhile appliance, either in demonstrations or in the fittings of the six room house which will be a feature of the exposition.

It is expected that the second exposition will surpass the first success in every way. A series of contests including the art poster announcing the exposition is being arranged, and the awards in first and second prizes will total

\$1,000. As these contests touch upon many phases of home life, additional interest is sure to be aroused.

While the exposition at first would seem to be purely a specialized affair it also has an instructive and educational value of great importance. Women especially will find much to learn in the exhibits of scores of labor and time saving devices, in electrical machines and appliances. The men will be able to make a choice as to special fittings, such as reading lamps, handy sockets and things for the garage or the den. In fact, everything will make for greater beauty inside the home.

Chester I. Campbell, who has for many years managed all the big expositions in Boston, is at the head of the Home Beautiful Exposition, and everything is being done under his personal direction.

Annual Sales Convention

The annual sales convention of The Robbins & Myers Company of Springfield, Ohio, was held at Springfield, November 25 to 29 inclusive. Representatives from all domestic branches, the export office and The Robbins & Myers Company of Canada were in attendance.

Sales and advertising plans for 1922 were explained and discussed. Considerable time was also spent with the engineering department where recent improvements in design and construction were explained.

A decided spirit of optimism was prevalent at this meeting. Nearly every delegate reported business on the upturn in his territory and expressed the belief that a marked improvement would soon be shown.

Annual Jambori

Samuel Adams Chase Principal Speaker at December 15 Meeting of Akron Local Association

Nearly two hundred electrical men from all branches of the industry attended the annual banquet of the Akron Electrical Contractor-Dealers' Association held at the Young's Hotel on Thursday night, December 15.

Much credit is due Chairman Claude Wall for the success of this meeting as it was largely through his efforts that the contractor-dealers of Akron were rounded up and urged to attend. It will be remembered that the local electragnists are decidedly above the average from the standpoint of up to date business methods, and the program had to

be of the first water to get them to leave their stores at such a busy time of the year even long enough to attend a meeting of their local Association.

Samuel Adams Chase, who was the speaker of the evening, furthering the interest of the Goodwin plan, gave a splendid talk on "Harmonizing the Industry." He covered the subject very thoroughly, and with illustrations pointed out the great work and possibilities that now await the contractor-dealer who goes after the business in a coöperative spirit. It was pointed out that it had proven difficult for an individual contractor or dealer to obtain great success without the fullest coöperation from the entire industry.

Mr. Chase stated that in unity there is strength and urged that the contractor-dealers association arrange to put on a coöperative advertising and selling campaign and that by so doing everybody—the contractor-dealer, the jobber and the manufacturer—would profit.

Regarding the sale of household appliances, Mr. Chase pointed out the necessity and importance of the contractor-dealer taking steps to install convenience outlets in houses now wired for electricity and to see that no new houses are completed in the future without convenience outlets. Such a movement would open up a vast field for appliances.

The electrification of furniture was also suggested as an outlet for the sale of appliances. Mr. Chase stated that if the central station retails along ethical lines and does business in accord with the contractor-dealer, it is a benefit to the industry for the central station to retail appliances.

Definite working committees have been formed in Akron to organize and carry on campaigns for better wiring, convenience outlets, house to house appliance sales, and modern home electricals.

Following Mr. Chase's talk supplementary remarks were given by a number of those present. Al Hilbert, chairman, and B. G. Gott, secretary, of the Builders' Exchange, expressed their willingness and desire to coöperate in every way possible with the contractor-dealers.

E. T. Foote, chairman of the appliance dealers committee, told what they were doing along merchandising lines. H. P. Kaile and N. H. Porter made a few remarks, and L. G. Tighe, general superintendent of the Northern Ohio Traction & Light Co., assured the con-

tractor-dealers of his company's fullest cooperation.

The program was concluded by several musical numbers.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

Electrical Engineering and Contracting Company will open an electrical supply and contracting business at 471 West 155th Street, New York City.

Kay County Electric Company is reported to have opened a new store carrying electrical appliances at Ponca City, Oklahoma. Incorporated capital, \$5,000. Incorporators: Edward Shafer and others.

Horace Sammons is opening a new electrical appliance store at Lafayette, Louisiana. Capital, \$2,000.

King Electric Company has opened a new supply store at 49th and Western Avenues, Los Angeles, California.

Crown Electrical Company opened a new store carrying a full line of electrical appliances at West Vernon Avenue and Hobart Street, Los Angeles, California.

Radice Electric Company is reported to have opened a new store at 4407 Third Avenue, New York City.

M. A. Lalonde will open a new electrical supply store at State Street, Oil City, Pennsylvania.

Tolison Electric Shop has opened a new electrical and auto supply store at Belton, South Carolina.

Isidor Satin is opening a new electrical appliance store at 326 Dwight Street, Springfield, Massachusetts.

Arron Electric Shop of which I. F. Weatherby is proprietor, will open a new store carrying electrical supplies at Lyons, New York.

Rhineland & Kreiter have opened an electrical contracting business at South Avenue, New Canaan, Connecticut.

E. H. Little is opening a new electrical appliance store at 738 Pacific Avenue, Tacoma, Washington.

White & Vincent are reported to have opened a new electrical contracting business at corner Merrick Road and Hempstead Avenue, Lynbrook, L. I.

Sylvester J. McBride has opened a new electrical supply store at Ashton Block, Main Street, opposite Mosley Avenue, West Springfield, Massachusetts.

Osterhoudt & Ragan have opened an electrical supply and appliance business at 203 North James Street, Rome, New York.

Brown & Williamson are opening a new electrical contracting business at 832 Jefferson Street, Wilmington, Delaware.

Powers Electric Company has opened a new supply store at Mount Olive, North Carolina.

R. C. Wilson is reported to have opened a new store carrying a full line of auto accessories and electrical appliances at Scottsville, Kentucky.

London E. Klein has leased a new store at 228 West 29th Street, New York City, where he will carry a full line of electrical goods.

Gilbain & Morris will open a new electrical supply store at 1215 I St., Washington, D. C., as soon as improvements have been completed.

Stewart Electrical Company has opened a new supply store at 528 Somerset Avenue, Bellflower, Los Angeles, California.

Thomas A. Cullen is opening a new electrical contracting business at 58 Taylor Street, Pittsfield, Massachusetts.

Elmer O. Penny and Dewey D. Hill have opened a new electrical appliance store at 107 Court Street, Charleston, Missouri.

Emerson-Waldman Electric Company is reported to have opened a new store carrying a full line of electrical fixtures at 1017 Church Avenue, Brooklyn, New York.

Triangle Electric Company is opening a new appliance store at Daly, California.

Stegeman Electric Company has opened a new store carrying a full line of electrical appliances at 1224 Broadway, Quincy, Illinois.

Henrietta Lamp Shade Shop is reported to have opened a new electrical fixture store at corner Smith & Livingston Streets, Brooklyn, New York.

City Electric Company is opening a new supply store at Danville, Illinois.

E. B. Haupt will open a new electrical appliance store at 38 North Main Street, Cape Girardeau, Missouri.

Good Housekeeping Shop, Inc., is opening a new store at 713 South Broadway, Los Angeles, California, where a full line of electrical appliances will be carried.

Koehler Electric Company has opened a new appliance store at 21 East Rich Street, Columbus, Ohio.

George Stewart will open a new electrical supply store in the Harold Building, North Jennings Street, Anthony, Kansas.

D. Herman & Son have opened a new store carrying a full line of electrical fixtures at 113 Ditmad Avenue, Brooklyn, New York.

Quality Electric Shop of which R. T. Porter and H. B. Humeston are proprietors is reported to have opened a new electrical appliance store at 124 East I Street, California.

Edward Churney has opened a new store in which a full line of electrical appliances will be carried at the Popp Building, Shawanto, Wisconsin.

Miller Electric Company is opening a new supply store at 106 Fourth Street, Monett, Missouri.

Northwestern Electric Company will open a new appliance store at East 105th Street and Hathaway Avenue, Cleveland, Ohio.

H. C. Electrical Company, of which H. C. Woolsey is manager, is reported to have opened a new electrical supply business at Harrisonville, Missouri.

Bigger & Grove have opened a new electrical appliance store at Nampa, Idaho.

McCleery-Carpenter Electric Company will open a new appliance business at 89 North Third Street, Columbus, Ohio.

Wiley & Haimbaugh are reported to have opened a new electric appliance store at Eaglerock, California.

Socond & Stusser, Inc., is opening a new store at 902 Fourth Avenue, Seattle, Washington, where a full line of electrical appliances will be carried.

W. S. Hunton is opening an electrical appliance business at Whitesburg, Kentucky.

F. A. Clarke Company, Inc., at present located at 713 South Broadway, L.

Angeles, California, will also open a branch store carrying a full line of electrical appliances at Garland and Eighth Streets. Headquarters at 732 South Spring Street.

Fred Joslin has opened a new electrical appliance store at Fourth St., Clare, Michigan.

E. A. Meyers and I. E. Bartlett are opening a new electrical supply business at Market Street, Inglewood, California.

Union Electric Store of which C. L. Brown is proprietor, will open business at Larned, Kansas.

J. E. Electrical Shop of which M. K. Rabenstein is proprietor, is reported to have opened at Orlando, California, where a full line of electrical supplies will be carried.

A. F. Trotts has opened a new electrical appliance store at Schoeffler Block, Commercial Street, Brandon, Wisconsin.

Are-Am-Bee Electric Company of which R. M. Baettner is proprietor, will open an electrical appliance business at 10308 Euclid Avenue, Cleveland, Ohio.

Wallace Hodge is opening a new electrical appliance store at Bristol, Tennessee.

Electric Supply Company of which L. F. O'Byrne is proprietor, will open an electrical supply store at 221 McDaniel Avenue, Springfield, Missouri. In market for stock and fixtures. Capital, \$5,000.

C. P. Scott & Company has opened an electrical appliance business at Portland, Oregon. Incorporated capital, \$10,000. Incorporators: C. P. Scott and others.

E. C. Gramm, electrical contractor of Washington, D. C., announces his removal to larger quarters, to 1909 14th Street, N. W., where he will have a complete line of electrical appliances and be equipped to install electrical wiring of all kinds in old and new buildings.

Clark & Mills Electric Company of Boston has moved into new quarters at 75 Newbury Street on account of increased business. A complete electrical line is carried. Officers of the company are Wm. E. Clark, Charles W. Mills, and Ralph S. Earle.

Radio Broadcasting Service

On account of the great success and widespread interest that has been the outcome of pioneering in radio telephone broadcasting by the Westinghouse Electric & Manufacturing Company, the company has announced a complete plan of covering the entire United States with a service to the home that will allow anyone anywhere in the country to enjoy the many benefits of radio.

The operation of the first radio broadcasting station of its kind in the country at East Pittsburgh, Pennsylvania, for the past twelve months has opened possibilities hitherto undreamed of. From this station alone persons in Canada, New England, Florida, Ari-

zona, the Dakotas, and at greater distances, have been able to enjoy the service. Even in Cuba, Mexico and on ships in the middle Atlantic and on the Gulf of Mexico many have heard the concerts broadcasted from East Pittsburgh.

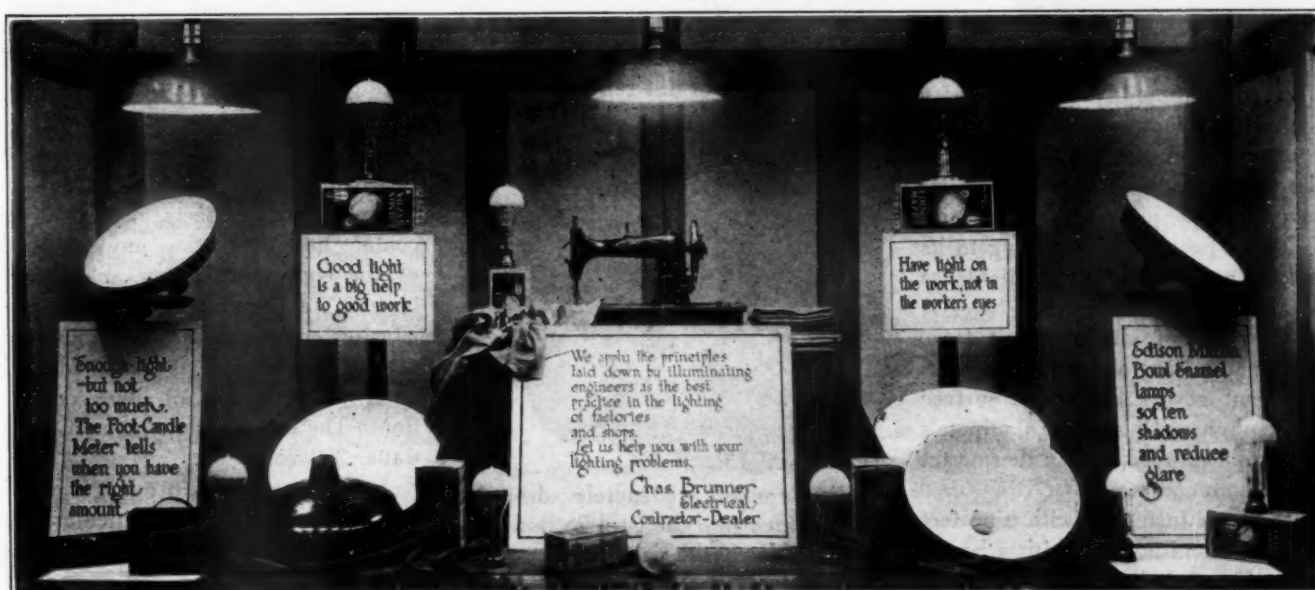
In order to cover certain parts of the country not reached by this station, and to intensively service other parts, the Westinghouse Company has laid out a complete program, and has already added three large stations at Springfield, Mass., which supplies New England; at Newark, N. J., which takes care of the Middle Atlantic and Southern states; and at Chicago, which services the Middle and Western states.

Industrial Lighting Displays

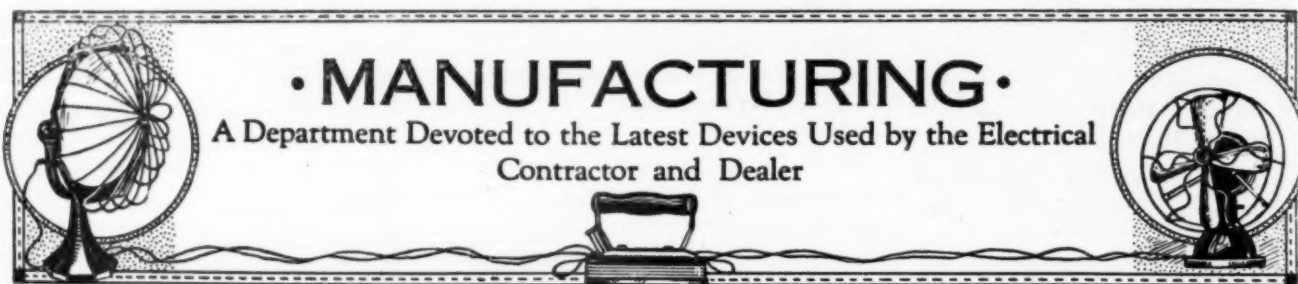
Many electragists are busy these days on factory and industrial shop lighting. Many more would be busy if they would advertise to the public through their show windows that they are seeking this kind of business.

A lighted fixture is more interesting and pleasing than a cold, bare arrangement, besides its value as an attractive feature of the display is worth consideration. Placing the store name at the bottom of a poster in the center of a display makes the message seem more sincere to the man reading it.

DO YOU include the Code of Practice as a part of your bid? It saves misunderstandings.



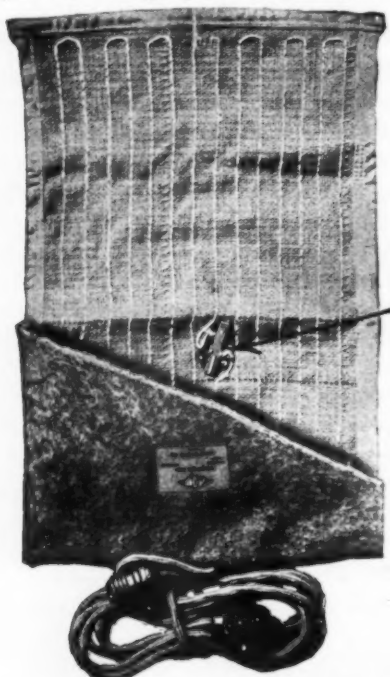
Bowl Enamel Mazda Lamps—100 Watt—Used in RLM Reflectors Make This Simple Display Effective. E. F. Newkirk of Edison Lamp Works, Harrison, N. J., Finds That Best Results are Secured by Keeping Lamps Lighted During the Day as Well as at Night



New Super Warming Pad

The Vit-O-Net Super Warming Pad is designed to fill the needs of the home, doctors and hospitals. Its heating arrangement is such that it can be used for all purposes.

The wire in this pad is a special alloy, fine in gauge, wound spirally



around asbestos yarn so that there are two feet of thoroughly insulated wire to each lineal foot. This wire is pliable, durable and will not kink.

The illustration shows how the wire is woven into the pad by special looms, thus doubly protecting it, adding to its durability and making it as pliable as cloth.

Vit-O-Net is of single circuit type, semi automatic control, and as the heating element covers the entire surface of the pad, it will heat in a minute's time. It is equipped with a thermostat with platinum contacts.

Vit-O-Net is furnished with nine feet of wire cord and is fitted with a handy on and off switch in the cord two feet from the pad. It operates on 110 and 125 volts, A. C. or D. C. current, and is also made for 32 volt home lighting plants.

Its size is 12x20 inches and the pad weighs 8 ounces; 9 ounces with wire connection, including plug and switch. Manufactured by Vitonet Corporation, New York City.

New Renewable Fuse

The Cote Bros. Manufacturing Corporation of Chicago has spent several years in perfecting a renewable fuse so simple that anyone could refill it and put a line back into operation. Its efforts have at last been successful and the fuse now offered is of the Edison type and renewable for use on circuits of 125 volts with ratings from 3 to 30 amperes.

The fuse as shown in the illustration consists of three parts, the body, the cap and the refill. The cap and body are of heat resisting molded insulation, and are built in generous proportions due to the first cost of these parts being the only cost. No skimping is necessary.

The refill is an ingenious little cartridge, properly vented for the emission of the gases when the element vaporizes, and has the rating of this element stamped on both ends so that it is always visible through the aperture regardless of how it is inserted in the body. The cost of this refill is very low.

The main feature of this fuse is the ease with which it is renewed. The



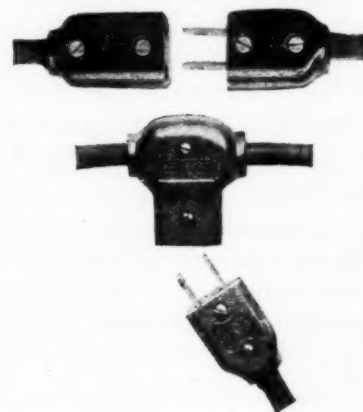
refilling consists of merely dropping the cartridge into the cuplike body and screwing down the cap. When so assembled there are no live parts of the plug exposed, rendering shocking impossible. This also leaves the rating visible at all times.

Other features are its freedom from

breaking or cracking when dropped, and the permanence of this type of installation. The fusing of the electrical system of a building in this manner insures it permanently against further trouble or expense, for all that is then necessary is a supply of the small inexpensive refills.

New Miniature Cord Connectors

A miniature cord connector for use wherever a small separable connection is desired, such as for vacuum cleaners, sewing machines, soda drink mixers,



fruit squeezers, etc., is a new product of the General Electric Company. It is only 2 9/16 inches long and 7/8 inches wide.

The recesses in the fingers snap over raised points on the heavy phosphor bronze spring contacts, making a firm contact and preventing any possibility of the connector falling apart—a decidedly important requisite in the satisfactory operation of the kind of devices for which it is intended. The outer part is made of black composition. The device has a capacity of 660 watts, 250 volts.

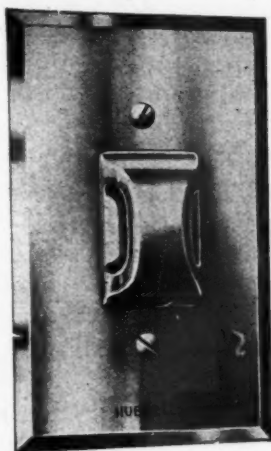
Another new G. E. product is a series tap connector. It is particularly applicable for attaching electrically operated sewing machines. It is the same in material, finish, capacity, design and operation as the cord connector described above, with the addition of the necessary connection to join it to the

motor and the treadle of a sewing machine.

New Flush Door Receptacle

A new type of Flush Door Receptacle which combines the invisible outlet features with perfect safety and ease in use has been put on the market by Harvey Hubbell, Inc., Bridgeport, Conn. The flush plate contains double in-folding doors, through which a special cap passes. The porcelain body concealed behind these doors is provided with narrow, beveled slots, set tandem.

These slots are just large enough to admit the brass blades of the cap which, passing through them, are engaged by two double springs of phosphor bronze. These springs are set within concealed



contact chambers, and cannot be reached from the outside except by way of these slots.

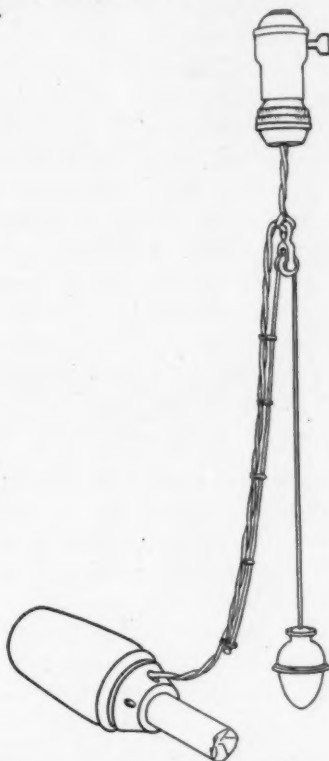
Hubbell Flush Door Receptacles are made with outlets for one or two caps. The receptacle body fits any standard outlet box. Five distinct styles of cap are available.

Permanent Hair Waver

To the madame who must of necessity spend much time in the making of her coiffure with the aid of such old fashioned methods as curling irons, crimpers, and other exasperating means, the recently perfected permanent hair waving device of the Verne Corporation, New York City, will be welcomed with abundant joy.

This appliance is reported to be the only one of its kind. It has attained universal recognition by its unique adaptability for every day use. Its distinctive merit is quickly seen in that it has been approved by the National Board of Underwriters.

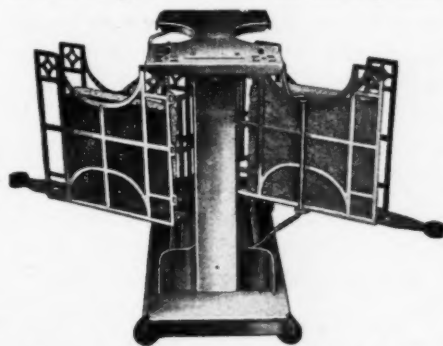
The Verne Permanent Hair Waver is so constructed that it cannot burn or crack the hair. The whole process of obtaining a wave takes only a short time.



This waver fills a long felt want in the home of every woman and should prove an enterprising proposition to the live electrager. The accompanying illustration shows the appliance in position for use.

New Reversible Toaster

A new reversible toaster is offered by Landers, Frary & Clark of New Britain, Conn. The easy swinging bread holder reverses by a slight touch of the finger. The mechanical princi-



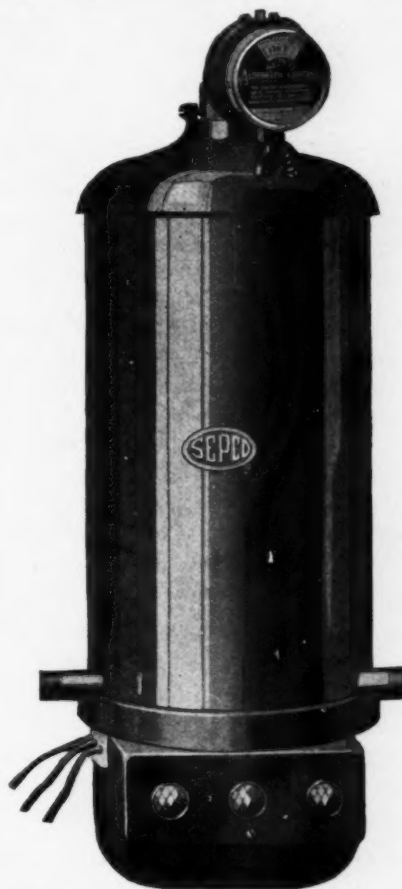
ple is very ingenious and much easier to manipulate than others heretofore devised. Bread can be easily removed from the holder with no danger of burning the fingers.

Another distinctive feature is that this toaster notwithstanding its reversing mechanism is particularly attractive in

appearance because of its fine finish and handsome design. The "Universal" Toaster unit construction brings the bread close to the unit and therefore requires but little current.

Automatic Water Heater

An improved model of the circulation type Sepco Automatic Electric Water Heater is being placed upon the market by the manufacturers, the Au-



tomatic Electric Heater Company of Warren, Pennsylvania.

While the new model embodies the regular Sepco hollow heating unit and Sepco control, the design and construction have been improved materially. Adequate air cell insulation and an outer metal casing reduce radiation losses to the lowest practicable minimum.

The control has been relocated in the top of the heater, insuring positive operation under all conditions of the water. The whole assembly has been strengthened and simplified.

IS YOUR Universal Data and Sales Book kept up to date? You need it for buying, selling and estimating.

Condensed Notes of Interest to the Trade

The pleasing colored lighting effects of the municipal Christmas tree at Chicago were made possible through X-Ray projectors. By floodlighting of the tree the elaborate ornaments of tinsel, crystal and other shining metal shown in all their grandeur.

Ten Sales Instead of One was the assurance Harvey Hubbell, Inc., of Bridgeport gave electragists before the holidays if they displayed the Te-Tap-Ten combination package on their counters, according to a direct mail folder sent out by this company.

In a new bulletin the Columbia Metal Box Co., New York City, announces a substantial reduction in its line of safety switches.

Ten years ago the Utilities Indemnity Exchange of St. Louis issued its first policies, during which the insuring organizations managed by this company have grown until they now represent a premium income of over a million dollars annually and the management has resulted in a return of savings of over six hundred thousand dollars in cash to policy holders.

In the form of a small letter size placard which can be readily hung on the wall, the Crouse-Hinds Company of Canada urges the advisability of paying cash for yearly purchases and thereby saving considerable money by thus taking advantage of discounts.

Henry D. Sears, general sales agent in Boston, has issued a new catalogue of Weber Wiring Devices. This catalogue is unusually attractive. It is printed in two colors and contains over 100 pages of illustrations and descriptive matter of the entire line, including an index and price list.

The Trico Fuse Mfg. Co. announces the location of its new branch office at 15 William St., New York City, and information is solicited concerning its line.

S. Robert Schwartz & Bro., 729 Broadway, New York City, have just issued a new catalogue covering their complete line of adjustable desk portables and floor lamps manufactured by them.

The Westinghouse Electric & Manufacturing Company announces that R.

J. Wensley has left for an extended trip through England to study electrical conditions. This company also announces the following changes in its service department: B. B. Burkett has been appointed district service manager in the Seattle office, succeeding N. P. Wilson, who has been transferred to sales service activities on switchboards and similar apparatus in the Seattle territory. The Salt Lake service department has been made a branch of the Denver office under the direction of A. F. Maccallum, district service manager. M. R. Davis, formerly district service manager at Salt Lake, will remain at Salt Lake and devote his time to field service work and to securing repair business for both shops.

The Western Electric Company announces the following important changes in the executive departments of six of its distributing offices: A. V. Willett, credit manager at Chicago; A. L. Perry, manager at Omaha; R. Mason, manager of the supply branch store at New Haven; E. R. Morgan, stores manager at Baltimore; A. W. Bates, stores manager at Detroit; H. L. Nash, manager of the telephone distributing house at New Haven; and R. L. Colfax, stores manager in charge of the telephone distributing house at Pittsburgh.

Albert Wahle has been appointed commander of the Lighting Fixtures Division in the mobilization of New York business men in the "Budget Guard," being organized by the National Budget Committee at 7 West 8th Street, under direction of Sam A. Lewisohn, well known banker, to support the movement for national economy and lower taxes. Every trade and industry in New York City is being mobilized with the most prominent men in their respective trades as division commanders.

The Okonite Company of Passaic, N. J., manufacturers of Okonite insulated wires and cables, Okonite and Manson Tape. Okoloom, etc., has opened a branch office in Atlanta, Ga., room 1513, Candler Building; E. A. Thornwell, southeastern sales representative, and John L. Phillips, manager.

Consolidating the small tool and drill divisions the GTD Corporation of Greenfield, Mass., has placed P. T. Irvin, formerly manager of its drill di-

vision, in charge of the consolidation, which will be called Small Tool Division.

The Cote Bros. Fuse Corporation of Chicago has brought out a new folder describing the refillable fuses which have caused much favorable comment since their introduction.

A new leaflet issued by the Torrington Company, describing the electric "vac" brings out the point that nineteen days of hard labor a year is the sentence pronounced on the housewife who does not have an electric vacuum cleaner.

The vacuum sweeper salesmen of the Western Electric Company were given an opportunity to compete for an unusually interesting and worthwhile prize. The trio who accounted for the most deliveries in their respective territories between November 20 and Christmas Eve enjoyed a trip to Worcester, the manufacturing center of their sweepers.

The Westinghouse Electric International Company announces that it has received from its Japanese agent, Takata & Company, an order for electrical apparatus for two large hydroelectric plants. The total value of this order is about \$2,000,000.

Making Appliance Handles

Eight hundred handles per hour is the regular capacity of the crew of four workers who manipulate the automatic machinery which finished handles for the Torrington carpet sweepers and electric vacuum sweepers.

The handles are first stained in vats, dried, and placed in heavy rack-trucks. A truck load of these handles stands before a man who feeds them into automatic finishing machines. The first machine has a series of high speed belt polishers, and the handles are automatically passed on to a second machine, part of which is a vat containing the final surfacing material. This finish is applied by machinery more uniformly than is humanly possible.

As the handles emerge a girl brushes the surplus material from the end. A man wearing a glove set with steel points picks up the wet handles and transfers them to a drying tray. The fourth man removes the trays as fast as they are filled. One handle is completed every four and one half seconds in the Torrington plant.

